ADVANCED FINANCIAL MANAGEMENT MCQ BOOK

FOR CA FINAL NEW SYLLABUS [MAY 2024 ONWARDS]

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DEDICATED TO MY LOVABLE FATHER [RAMESH JAIN]

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Suggestions/Feedback:

- MCQ book comprehensively addresses a wide array of AFM concepts with primary focus on enhancing student's conceptual understanding. You can revise entire AFM by just solving this MCQ book

- If you come across any inaccuracies within the book, kindly reach out via WhatsApp at 9025640862. Your feedback will contribute in improving future editions. Additionally, if you identify specific concepts absent from the MCQ book that you believe should be included, please message us with your suggestions

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Chapter 1 – Financial Policy and Corporate Strategy

1. What is the expanded role of CFOs in modern times?
   a. Wealth maximization for shareholders
   b. Overseeing financial controls
   c. Only contributing to strategic decision-making
   d. Overseeing risk management, supply chain, mergers, acquisitions, and ESG financing

2. What does corporate level strategy primarily deal with?
   a. Coordination of operating units
   b. Short-term functional planning
   c. Selection of businesses and portfolio development
   d. Financial resource allocation

3. Financial planning helps in:
   a. Identifying short-term goals
   b. Meeting long-term objectives through financial tools
   c. Maximizing profits without considering financial resources
   d. Evaluating performance without setting financial objectives

4. Which is not a major component of financial planning?
   a. Financial Resources (FR)
   b. Financial Tools (FT)
   c. Financial Goals (FG)
   d. Financial Decision-making (FD)

5. What is an essential element of strategy at the corporate level?
   a. A clear and realistic strategy
   b. The right management team
   c. Determination of optimal mix of funds
   d. Tactical and operational planning

6. Financial planning is best described as:
   a. Setting the right dividend policy for the company
   b. Utilizing financial tools to maximize existing financial resources
   c. Making tactical investment decisions for business expansion
   d. Allocating funds between short-term and long-term investments

7. What level of strategy is concerned with practical coordination of operating units and competitive advantage for products and services?
   a. Corporate Level Strategy
   b. Business Unit Level Strategy
   c. Functional Level Strategy
   d. Operational Level Strategy

8. The strategic issues at the functional level are related to:
   a. Corporate-level strategy development
   b. Tactical decision-making
   c. Business unit-level processes
   d. Value chain activities

9. The evolving concept of ESG has shifted the CFO's role towards:
   a. Traditional financing
   b. Sustainability financing
   c. Risk management
   d. Cost reduction strategies

10. The sustainable growth model assumes that a firm wants to:

      a. Issue new equity regularly
      b. Increase financial leverage continuously
      c. Maintain a target dividend payment ratio
      d. Reduce sales growth to conserve resources

11. Which combination forms the fundamental of business?
      a. Investment + Financial Resources + Clear Strategy
      b. Strategy + Management + Investor Returns
      c. Finance + Management + Capital Investment
      d. Strategy + Finance + Management

12. Mature firms often have actual growth rates that are:
      a. Higher than the sustainable growth rate
      b. Lower than the sustainable growth rate
      c. Unrelated to the sustainable growth rate
      d. Equal to the sustainable growth rate

13. How does inflation impact a firm's sustainable growth rate?
      a. It decreases the need for external financing
      b. It reduces the debt-to-equity ratio
      c. It lowers the retention rate of earnings
      d. It increases the amount of external financing required

14. The sustainable growth rate indicates the maximum rate of growth in sales that a firm can achieve without:
      a. Adopting a pause strategy
      b. Issuing new equity
      c. Implementing a profit strategy
      d. Borrowing more money

Case Scenario (Next three questions)
Company XYZ is a successful and established firm in the manufacturing industry. Over the past few years, it has experienced steady growth, and its management is now contemplating its future growth prospects. The Chief Financial Officer (CFO) has been asked to assess the company's sustainable growth rate to determine how much it can grow without relying on external financing. This analysis is critical for the company to maintain financial stability and avoid excessive debt. He has arrived at the following information about the company:
- Net profit margin = 10%
- Asset Turnover ratio = 2 Times
- Total Assets/Equity (Equity Multiplier) = 1.25 Times
- Dividend payout ratio = 80%

15. How much is the sustainable growth rate of company XYZ?
      a. 8%
      b. 5%
      c. 20%
      d. 2%

16. If Company XYZ's profit margin increases, how will it affect its sustainable growth rate?
      a. Sustainable growth rate will increase.
      b. Sustainable growth rate will decrease.
      c. Sustainable growth rate will remain unchanged.
      d. It is not possible to determine the effect from the information provided.

17. A company's return on equity becomes 50% of the original ROE and the retention ratio of the company is doubled. How does this impact SGR of the company?
      a. Sustainable growth rate will increase.
      b. Sustainable growth rate will decrease.

c. Sustainable growth rate will remain unchanged.

d. It is not possible to determine the effect from the information provided.

Answer:

1.	Overseeing risk management, supply chain, mergers, acquisitions, and ESG financing
2.	Selection of businesses and portfolio development
3.	Meeting long-term objectives through financial resources
4.	Financial Decision-making
5.	A clear and realistic strategy
6.	Utilizing financial tools to maximize existing financial resources
7.	Business unit level strategy
8.	Value Chain Activities
9.	Sustainability Financing
10.	Maintain a target dividend payment ratio
11.	Strategy + Finance + Management
12.	Lower than the sustainable growth rate
13.	It increases the amount of external financing required
14.	Borrowing more money
15.	**Answer to the question is 5%** ROE = Net profit margin x Asset Turnover x Equity Multiplier $\text{ROE} = \left(\frac{\text{Net Profit}}{\text{Sales}}\right) \times \left(\frac{\text{Sales}}{\text{Total Assets}}\right) \times \left(\frac{\text{Total Assets}}{\text{Equity}}\right) = 10 \; x \; 2 \; x \; 1.25 = 25\%$ SGR = ROE x Retention ratio = 25% x 20% = 5.00%
16.	Sustainable growth rate will increase as increase in profit margin will lead to better ROE and which in turn would improve SGR
17.	Sustainable growth rate will remain unchanged Original Situation: ROE (assumed) = 20% and Retention ratio (assumed) = 40% SGR = 20% x 40% = 8.00% Revised situation: ROE (becomes half) = 10% and Retention ratio (doubles) = 80% SGR = 10% x 80% = 8.00%

Chapter 2 – Risk Management

1. Liquidity risk refers to:
    a. Failure to comply with laws and regulations
    b. Internal operational failures
    c. Inability to meet liabilities when they become due
    d. Financial losses due to interest rate changes

2. Financial risk can be divided into the following categories, except:
    a. Counterparty risk
    b. Compliance risk
    c. Interest rate risk
    d. Currency risk

3. VAR calculates the maximum possible loss at a given confidence level over a specific time horizon. What are the main components used in VAR calculation?
    a. Risk Control, Risk Limit, and Risk Probability
    b. Time Period, Risk Probability, and Loss in percentage or amount
    c. Time Horizon, Risk Control, and Risk Limit
    d. Risk Limit, Time Horizon, and Loss in percentage or amount

4. Political Risk mainly affects which of the following organizations?
    a. Exporters
    b. Importers
    c. Banking Companies
    d. Overseas Investors

5. Interest Rate Risk is more relevant for which type of companies?
    a. Manufacturing Companies
    b. Banking Companies
    c. Service Companies
    d. Retail Companies

6. An employee of the company paid Rs.1,00,000 to a vendor from the company account in place of Rs.10,000. This is an example of _____
    a. Operational risk
    b. Liquidity risk
    c. Compliance risk
    d. Strategic risk

7. What is the multiple for 95 percent confidence level?
    a. 0.95
    b. 1.65
    c. 2.33
    d. 2.85

8. What is the formula for calculating Value at Risk?
    a. Daily standard deviation x Square root of (No of days)
    b. Daily standard deviation x No of days
    c. Daily standard deviation x Multiple for confidence level x No of days
    d. Daily standard deviation x Multiple for confidence level x Square root of (No of days)

9. _____ is a risk in which a company's strategy becomes less effective and it struggles to achieve its goal
    a. Compliance risk
    b. Strategic risk
    c. Operational risk
    d. Financial risk

10. You are holding portfolio of Rs.1,00,000. The standard deviation is 21% per annum. What is monthly VAR at 99% confidence level?
    a. Rs.1,750
    b. Rs.4077.50
    c. Rs.6,062
    d. Rs.14,125

11. You own a portfolio of 10 crores. The daily standard deviation is 2%. What will be the loss for 10 days at 95 percent confidence interval?
    a. Rs.104.36 lacs
    b. Rs.63.25 lacs
    c. Rs.330 lacs
    d. Rs.200 lacs

12. Acceptable loss = Rs.2,33,000. Standard deviation of the security is 1.5 percent per day. What is the maximum acceptable investment where VAR should not exceed acceptable loss? The required confidence level is 99 percent and the investment is to be done for 9 days.
    a. Rs.66,66,667
    b. Rs.22,22,222
    c. Rs.7,40,741
    d. Rs.1,00,00,000

13. Which risk can be controlled by setting limits for maximum loss?
    a. Counter Party Risk
    b. Political Risk
    c. Interest Rate Risk
    d. Liquidity Risk

14. Strategic Risk is a type of risk that arises due to:
    a. Failure to comply with regulations
    b. Changes in interest rates
    c. Shifts in customer demand and technological changes
    d. Currency fluctuations

15. Which of the following is an example of financial risk?
    a. Changes in customer preferences
    b. Failure to meet day-to-day operational challenges
    c. Default by a counterparty
    d. Failure to comply with regulations

16. Which of the following parameters can help identify currency risk?
    a. Government action
    b. Nominal GDP
    c. Population growth rate
    d. Stock market performance

17. Which of the following best describes the interpretation of a VaR value of $1 million at a 95% confidence level?
    a. There is a 95% chance of a loss exceeding $1 million.
    b. There is a 5% chance of a loss exceeding $1 million.
    c. There is a 5% chance of a loss equal to or less than $1 million.
    d. The expected loss is $1 million.

18. Which of the following statistical distributions is often used to calculate VaR?
    a. Normal distribution
    b. Uniform distribution
    c. Exponential distribution

    d.   Poisson distribution

19. Which of the following is a measure of financial risk?
    a.   Return on investment
    b.   Profit margin
    c.   Debt-to-equity ratio
    d.   Gross revenue

Case Scenario (Next three questions)
HedgeFund X is a prominent investment firm specializing in managing alternative investments and providing superior risk-adjusted returns to its clients. The fund employs a diverse range of trading strategies across various asset classes, including equities, fixed income, derivatives, and commodities. To effectively manage risk and safeguard their clients' investments, HedgeFund X employs the Value at Risk (VAR) metric as a key risk management tool.

The Risk Management team then employs different statistical methods, such as historical simulation or Monte Carlo simulation, to compute VAR for each asset class and the overall portfolio. The company follows 95% confidence interval for computing the VAR.

After conducting the calculations, the team presents the following results to the senior management:
- The VAR of equities is Rs.165 lacs over the next one year. Standard deviation of equities is 10% per annum
- The VAR for the fixed income securities portfolio is Rs.50 lacs
- The VAR for the commodities portfolio is Rs.200 lacs
- The VAR for the foreign exchange portfolio is Rs.140 lacs

20. Compute the amount of equity portfolio of Hedgefund X?
    a.   Rs.1000 lacs
    b.   Rs.1,650 lacs
    c.   Rs.2,722.50 lacs
    d.   Rs.2,000 lacs

21. The company has a debt portfolio of Rs.2,000 lacs whereas it had a commodity portfolio of Rs.500 lacs. Which of these two assets classes have higher risk?
    a.   Debt carries high risk
    b.   Commodities carry high risk
    c.   Both asset classes have same risk

22. Which of the following is a limitation of using VAR at HedgeFund X?
    a.   VAR cannot capture potential losses in extreme market conditions.
    b.   VAR is overly reliant on future market predictions.
    c.   VAR is most suitable for measuring operational risks.
    d.   VAR cannot calculate the fund's historical performance.

Answer:

1.	Inability to meet liabilities when they become due
2.	Compliance risk
3.	Time Period, Risk Probability, and Loss in percentage or amount
4.	Overseas investors
5.	Banking Companies
6.	Operational risk
7.	1.65
8.	Daily standard deviation x Multiple for confidence level x Square root of (No of days)
9.	Strategic risk
10.	Annual SD = 1,00,000 x 21% = Rs.21,000 Monthly SD = 21,000 x $\sqrt{12}$ = Rs. 6,062.18 Monthly VAR = 6,062.18 x 2.33 = Rs.14,125

11.	Portfolio = 1,000 lacs; Daily SD = 1,000 lacs x 2% = Rs.20 lacs
	Daily loss = 20 lacs x 1.65 = Rs.33 lacs
	Loss for ten days = Rs. 33 lacs x $\sqrt{10}$ = Rs. 104.36 lacs

12.	Daily SD = 1.50%; SD for 9 days = 1.5% x $\sqrt{9}$ = 4.50%
	Multiple for 99 percent confidence = 2.33
	Value at risk = 4.5% x 2.33 x Amount of investment
	2,33,000 = 4.5% x 2.33 x Amount of investment
	Amount of investment = $\dfrac{1,00,000}{4.5\%}$ = Rs. 22,22,222

13.	Counter Party Risk
14.	Shifts in customer demand and technological changes
15.	Default by a counterparty
16.	Government Action
17.	There is a 5% chance of a loss exceeding $1 million.
18.	Normal distribution
19.	Debt-to-equity ratio
20.	Answers to this question is Rs.1,000 lacs
	Value at risk = Multiple for 95% x Annual loss
	165 lacs = 1.65 x (Portfolio x 10%)
	Portfolio = $\dfrac{165\ \text{lacs}}{1.65 \times 0.10}$ = Rs. 1,000 lacs
21.	Commodities carry higher risk as they have VAR of Rs.200 lacs on a portfolio of Rs.500 lacs. Debt has a VAR of only Rs.50 lacs on overall portfolio of Rs.2,000 lacs.
	VAR % of debt on portfolio = $\dfrac{50}{2,000}$ = 2.50%
	VAR % of commodities on portfolio = $\dfrac{200}{500}$ = 40%
22.	VAR cannot capture potential losses in extreme market conditions. VAR assumes that market conditions remain relatively stable, and it may not fully capture extreme events.

Chapter 3 – Advanced Capital Budgeting Decisions

1. How does inflation impact the discount rate used in capital budgeting?
   a. Inflation increases the discount rate
   b. Inflation decreases the discount rate
   c. Inflation has no effect on the discount rate
   d. Inflation makes the discount rate irrelevant

2. Which of the following statements is/are true?
   a. NPV is not useful for evaluating mutually exclusive projects.
   b. The result of the NPV technique is not affected by the discount rate used.
   c. Benefit-cost ratio helps in evaluating the projects which differ in initial outlays.
   d. The advantage of NPV criteria is that it remains the same for all possible reinvestment rates of intermediate cash flows.

3. What is the impact of inflation on depreciation charges in capital budgeting?
   a. Inflation increases the tax benefits from depreciation charges
   b. Inflation decreases the tax benefits from depreciation charges
   c. Inflation has no effect on the tax benefits from depreciation charges
   d. Inflation increases the historical costs used for depreciation calculations

4. What adjustment can be made to incorporate the impact of change in technology in capital budgeting decisions?
   a. Adjusting the risk factor.
   b. Adjusting the discounting rate.
   c. Adjusting the project timeline.
   d. Adjusting the project team.

5. NPV at discounting rate of 10% = Rs.1,250 and NPV at discounting rate of 11% = -Rs.200. IRR of the proposal is _____
   a. 11.86%
   b. 10.86%
   c. 9.87%
   d. 11.96%

6. Which of the following statements about independent projects is least accurate?
   a. The internal rate of return and net present value methods can yield different accept/reject decisions for independent projects.
   b. If the internal rate of return is less than the cost of capital, reject the project.
   c. The net present value indicates how much the value of the firm will change if the project is accepted

7. How can change in technology impact the anticipated life cycle of a product?
   a. It has no impact on the product's life cycle.
   b. It extends the product's life cycle.
   c. It shortens the product's life cycle.
   d. It increases consumer preference.

8. What is the ultimate goal of risk analysis in capital budgeting?
   a. To eliminate all risks associated with a project.
   b. To ensure a positive net present value.
   c. To ignore potential risks and uncertainties.
   d. To make informed decisions considering potential risks and their impact.

9. Which risk analysis technique helps identify the critical variables that have the most significant impact on project outcomes?
   a. Sensitivity analysis.
   b. Scenario analysis.

    c. Payback period analysis.
    d. Decision tree analysis.

10. What is the purpose of decision tree analysis in risk analysis?
    a. To assess the impact of changing one variable at a time.
    b. To evaluate various scenarios and their probabilities.
    c. To calculate the payback period of a project.
    d. To analyze sequential decisions and their outcomes.

11. Which risk analysis technique is useful for evaluating projects with complex interdependencies?
    a. Sensitivity analysis.
    b. Scenario analysis.
    c. Payback period analysis.
    d. Monte Carlo simulation.

12. ABC Limited is currently investing in a hydel power project and the construction work for the same has commenced. There has been a change in key management personnel of the company and this would significantly impact project progress. This is an example of _____
    a. Project specific risk
    b. Company specific risk
    c. Industry specific risk
    d. Market risk

13. When an event is certain to occur, the probability will be:
    a. 0
    b. 0.5
    c. 1
    d. 2

14. The coefficient of variation is calculated as:
    a. Standard deviation / Expected cash flows
    b. Variance / Discount rate
    c. Expected cash flows / Standard deviation
    d. Discount rate / Variance

15. Which of the following is an example of an irrelevant cash flow in a capital budgeting decision?
    a. Working capital requirements
    b. Increased maintenance expenses
    c. Changes in overhead costs
    d. Financing costs

16. A company has currently invested in a thermal power project and is dependent on coal for generating power. However, the coal mines are currently unable to supply coal and same is impacting power generation. This is an example of _____?
    a. Industry specific risk
    b. Market risk
    c. Risks due to economic conditions
    d. Company specific risk

17. A project is likely to generate following annual cash flows

Cash flow	Probability
10,000	0.25
20,000	0.45
30,000	0.30

The company has employed simulation technique to evaluate the project and has started the simulation exercise. Random number of 70 was generated in the first experiment and this would correspond to annual cash flow of _____

          a. Rs.10,000
          b. Rs.20,000
          c. Rs.30,000

18. Discount rate used in simulation exercise is _____
          a. Risk-free rate
          b. Risk-free rate + Risk premium
          c. Cost of capital

19. The Profitability index of a project is 1.20. Present value of cash inflows is Rs.2,40,000. How much is the NPV of the project?
          a. Rs.2,88,000
          b. Rs.48,000
          c. Rs.40,000
          d. Rs.2,00,000

20. Inflation rate = 10%; Real discount rate = 4%. How much is nominal discount rate?
          a. 14%
          b. 14.40%
          c. 6%
          d. 5.6%

21. Real revenues of year 2 is Rs.10,00,000. Inflation for year 1 is 10% and year 2 is 8%. How much is nominal revenues of year 2?
          a. Rs.11,00,000
          b. Rs.10,80,000
          c. Rs.11,88,000
          d. Rs.11,66,400

22. Project cost = Rs.12,000; Annual cash flow = Rs.4,500; Cost of capital = 14%; Life = 4 years; PVIFA(14%,4) = 2.9137, then the sensitivity of the project with respect to project cost is
          a. 9.27%
          b. 10.27%
          c. 9.72%
          d. 10.72%

23. A company has invested in a factory. It is evaluating the risk associated with cash inflows of the project. The company has entered into a contract of providing services in return of specified amount over the life of the project. How much is the variance of cash inflow?
          a. High variance as investing in factory carries huge risks due to inherent issues in operating a factory
          b. Low variance as investment in a factory is less risky
          c. No variance as the cash flow is certain
          d. Variance cannot be computed with the given information

24. The most appropriate discount rate to be used for capital budgeting would be
          a. Firm's WACC
          b. Project's hurdle rate
          c. Cost of debt
          d. Cost of equity

25. Company A is evaluating two mutually exclusive projects. Both projects can be repeated indefinitely. Project A has NPV of Rs.20,000 over three years and Project B has NPV of Rs.25,000 over five years. The cost of capital is 12%. Which project should the company select?
          a. Project A
          b. Project B
          c. Indifferent between Project A and B
          d. Both projects to be rejected

26. ABC Limited is evaluating a new piece of equipment that will automatically install power windows in cars coming off the production line. The equipment cost is Rs.35,00,000, and the firm estimates that the present value of the annual cost savings from installing the equipment is Rs.28,00,000. The production manager is also considering purchasing a module that will allow the equipment to be used for company's SUV production. The additional module represents a real option with a cost of Rs.11,00,000. The production manager estimates that adding the module would give cost savings of an additional Rs.20,00,000. What is the NPV of the project before and after considering the real option?
    a. -7,00,000 and 2,00,000
    b. -7,00,000 and 18,00,000
    c. 13,00,000 and 2,00,000
    d. -7,00,000 and 9,00,000

27. Which of the following statements about sensitivity analysis is least accurate?
    a. Sensitivity analysis alters a single independent variable to determine the impact on the output variable.
    b. Sensitivity analysis starts with the best-case scenario.
    c. The steeper the slope of the NPV versus the variable, the more sensitive the output variable is to a change in the input variable

28. A is working on a capital project valuation and needs to determine the appropriate discount rate. She has the following information available:
    Risk-free-rate = 8%
    Market Beta = 1.0
    Company Beta = 1.1
    Project Beta = 1.2
    Expected market return = 13%
    Trailing 12-months market return = 12%
    Which of the following is closest to the most appropriate discount rate?
    a. 13.5%
    b. 13.0%
    c. 14.0%
    d. 12.8%

29. A company is considering replacement of an existing machine with a new machine. How much would be the initial outflow from following information?

Purchase price of the new machine	Rs.8,000
Shipping and Installation charge	Rs.2,000
Sale price of old machine	Rs.6,000
Book value of old machine	Rs.2,000
Inventory increases if installed	Rs.3,000
Accounts payable increase if installed	Rs.1,000
Tax rate on capital gains	25%

    a. Rs.7,000
    b. Rs.10,000
    c. Rs.3,000
    d. Rs.5,000

30. A project is likely to generate cash flows of Rs.1,00,000 (20% probability), 50,000 (40% probability) and -25,000 (40% probability). How much is the expected cash flow of the project?
    a. Rs.1,25,000
    b. Rs.40,000
    c. Rs.30,000
    d. Rs.50,000

31. A project is likely to generate cash flows of Rs.1,00,000 (20% probability), 50,000 (40% probability) and -25,000 (40% probability). How much is the standard deviation?
    a. Rs.48,477
    b. Rs.27,386
    c. Rs.37,417
    d. Rs.50,000

32. Project A generates NPV of Rs.10,00,000 and has standard deviation of Rs.5,00,000. Project B has NPV of Rs.14,00,000 and Standard deviation of Rs.8,00,000. Which project is to be selected if co-efficient of variation is used as a measure of risk?
    a. Project A
    b. Project B
    c. Indifferent
    d. Both projects to be rejected

33. Company is evaluating an investment project whose risk is higher than risk involved in a normal project of the company. What should be the discount rate used for the project?
    a. Discount rate = Cost of capital
    b. Discount rate > Cost of capital
    c. Discount rate < Cost of capital

34. Project A and B are for a 3-year period. Certainty equivalent factor of project A is 0.80 and project B is 0.70. Which of these two projects should be discounted with a higher Risk-adjusted discount rate?
    a. Project A
    b. Project B
    c. Same rate for both projects

35. A project is being evaluated using certainty equivalent approach. Project's hurdle rate is 12% whereas the market return is 10%. Risk-free rate is 8%. What should be the discount rate under CEF approach?
    a. 12%
    b. 10%
    c. 8%

36. Certain cash flow of a project under CEF approach is Rs.2,00,000. CEF factor is 0.80. How much is the uncertain cash flow?
    a. Rs.1,60,000
    b. Rs.2,00,000
    c. Rs.2,50,000

37. Identify the factor which causes maximum sensitivity to the project from the following information:

Base NPV	Rs.200 lacs
NPV with 10% variation in Selling price	Rs.150 lacs
NPV with 10% variation in cost price	Rs.180 lacs
NPV with 10% variation in life	Rs.100 lacs
NPV with 10% variation in units sold	Rs.160 lacs

    a. Selling price
    b. Cost price
    c. Life
    d. Units sold

38. A project currently has NPV of Rs.25 lacs. However, the project is sensitive to multiple factors with a significant variation in the factors causing reversal of investment decision. The analysis is summarized in the below table

Factor	% variation for reversal of decision
Selling price	25%
Cost price	45%

Units sold	70%
Fixed cost	10%

The project is most sensitive to which factor?
    a. Selling price
    b. Cost price
    c. Units sold
    d. Fixed cost

39. The expected monetary value (EMV) at the chance node (decision tree) with branches emanating from a circle is the
    a. highest amongst the expected values of the various branches that emanate from the decision node
    b. aggregate of the expected values of the various branches that emanate from the chance node.

40. The expected monetary value (EMV) at the decision node (decision tree) with branches emanating from a square is the
    a. highest amongst the expected values of the various branches that emanate from the decision node
    b. aggregate of the expected values of the various branches that emanate from the chance node.

41. A company is re-evaluating the decision to continue with an existing machine. The machine was purchased for Rs.20,00,000 three years ago and is being depreciated based on an economic life of 8 years. The company is following SLM method of depreciation. The machine can be sold today for Rs.10,00,000. The tax rate on business profits and capital gains is 25% and 20%. How much is the opportunity outflow related to old machine today?
    a. Rs.10,00,000
    b. Rs.9,50,000
    c. Rs.10,50,000
    d. Rs.10,62,500

42. Which of the following is/are not true regarding the risk adjusted investment appraisal techniques?
i. In the certainty equivalent method, if there is high degree of correlation between the cash flows over the entire project life the certainty equivalent coefficient is taken as one for all the years.
ii. In sensitivity analysis, the impact of the changes in one or more variables on the criterion of merit is studied.
iii. Simulation does not produce an optimal solution but the user of the technique has to generate all possible combinations of conditions and constraints to choose the optimal solution
    a. Only (ii) above.
    b. Only (iii) above.
    c. Both (i) and (ii) above
    d. Both (i) and (iii) above

43. In adjusted present value approach, _____ and _____ is used as discount rate for compute base case NPV and PV of tax benefit on interest respectively
    a. Cost of capital and pre-tax cost of debt
    b. Cost of capital and post-tax cost of debt
    c. Cost of equity and pre-tax cost of debt
    d. Cost of equity and post-tax cost of debt

44. A company is computing standard deviation of the project. Which of the following is accurate about standard deviation?
    a. SD of independent cash flow is more than SD of dependent cash flow
    b. SD of dependent cash flow is more than SD of independent cash flow
    c. SD of independent cash flow is equal to SD of dependent cash flow

45. Initial Outlay of Project = Rs.50,000, Cost of capital = 12.00%; Life of the project = 4 years. Aggregate future value of cash inflows = Rs.1,04,896.0. How much is the MIRR of the proposal?
    a. 20.35%

   b. 21.53%
   c. 31.25%
   d. 12.25%

46. A project has life of 2 years. The probability of the best cash flow is 30% in each year. What would the probability of best case NPV if cash flows are (i) perfectly correlated and (ii) independent overtime.
   a. 30% and 30%
   b. 30% and 60%
   c. 30% and 9%
   d. 9% and 30%

47. What is the major difference between risk and uncertainty?
   a. Risk can be measured whereas uncertainty cannot be measured
   b. Risk cannot be measured whereas uncertainty can be measured
   c. Both risk and uncertainty can be measured
   d. Both risk and uncertainty cannot be measured

48. The present value of cash inflows is Rs.2,00,000 and the present value of cash outflow is Rs.1,50,000. How much is the sensitivity of the project with respect to outflow parameter?
   a. 25%
   b. 33.33%
   c. Cannot be computed

49. Cost of capital of the project is 12%. Cost of capital (discount rate) sensitivity is 5%. How much is the IRR of the project?
   a. 17%
   b. 12.60%
   c. 7%
   d. 11.40%

50. A company has evaluated a project using certainty equivalent approach. The cost of capital is 10% and risk-free rate is 8%. IRR of the project is 9%. What should be the decision on the project?
   a. Accept the project
   b. Reject the project
   c. Indifferent on acceptance/rejection

51. Risk index of project is 2.00. Minimum required rate of return of the firm is 15% and the risk-free interest rate is 10%. How much is the RADR?
   a. 10%
   b. 15%
   c. 20%

52. Probability of cash flow of Rs.50,000 in year 1 is 40%. If the cash flow turns out to be 50,000 in year 1, then the probability of getting 24,000 in year 2 is 20%. What is the probability of getting cash flow of 24,000 in year 2?
   a. 20%
   b. 80%
   c. 8%
   d. 40%

53. When evaluating investment projects in different countries with varying inflation rates, which of the following concepts is most appropriate for comparing the cash flows on an equal footing?
   a. Nominal cash flow.
   b. Real cash flow.
   c. Expected cash flow.
   d. Discounted cash flow.

Answer:

1.	Inflation increases the discount rate
2.	Benefit cost ratio helps in evaluating the projects which differ in initial outlays
3.	Inflation decreases the tax benefits from depreciation charges. Note: This is because depreciation is based on historical cost and any increase in inflation will lead to higher discount rate reducing the tax benefit arising from depreciation
4.	Adjusting the discounting rate
5.	$IRR = 10 + \dfrac{1,250}{1,250 - (-200)} \times (11 - 10) = 10 + 0.86 = 10.86\%$
6.	The internal rate of return and net present value methods can yield different accept/reject decisions for independent projects **Explanation:** For independent projects the IRR and NPV give the same accept/reject decision. For mutually exclusive projects the IRR and NPV techniques can yield different accept/reject decisions
7.	It shortens the product's life cycle.
8.	To make informed decisions considering potential risks and their impact.
9.	Sensitivity Analysis
10.	To analyze sequential decisions and their outcomes.
11.	Monte Carlo Simulation
12.	Company specific risk
13.	1
14.	Standard Deviation/Expected cash flows
15.	Financing costs are ignored due to reward exclusion principle
16.	Market Risk
17.	Cash flow of Rs.30,000 | Cash flow	Prob	Cum prob	RN
---	---	---	---
10,000	0.25	0.25	00-24
20,000	0.45	0.70	25-69
30,000	0.30	1.00	70-99	 RN of 70 would correspond to annual cash flow of Rs.30,000 as per above table
18.	Risk-free rate
19.	NPV = PV of inflows – PV of outflows $NPV = 2,40,000 - \left(\dfrac{2,40,000}{1.20}\right) = 2,40,000 - 2,00,000 = Rs.40,000$
20.	(1+ Nominal Discount rate) = (1 + Inflation rate) x (1 + Real discount rate) (1 + NDR) = (1.10 x 1.04) NDR = 1.144 – 1 = 0.144 (or) 14.40%
21.	Nominal revenues = Real revenues x (1 + Inflation rate of year 1) x (1 + Inflation rate of year 2) Nominal revenues = 10,00,000 x (1 + 10%) x (1 + 8%) = Rs.11,88,000
22.	PV of cash inflows = 4,500 x 2.9137 = 13,111.65 NPV of project = 13,111.65 – 12,000 = 1,111.65 Project will have zero NPV if the outflow of the project increase by Rs.1,111.65 **Sensitivity** $\% = \dfrac{\textbf{Change}}{\textbf{Base}} \times \textbf{100} = \dfrac{\textbf{1,111.65}}{\textbf{12,000}} \times \textbf{100} = \textbf{9.27}\%$
23.	No variance as the cash flow is certain. The company has entered into a contract in return of specified amount. Hence there cannot be any variance as the cash inflow is certain.
24.	Project's hurdle rate is the appropriate discount rate reflecting the project's risk. Firm's WACC reflects the firm's risk and not the project's risk.
25.	We need to compute EAB for selection of the project. $EAB\ of\ Project\ A = \dfrac{20,000}{2.402} = 8,326$ $EAB\ of\ Project\ B = \dfrac{25,000}{3.605} = 6,935$ We should go ahead with selection of Project A
26.	NPV of base project = 28,00,000 – 35,00,000 = -7,00,000 NPV of real option = 20,00,000 – 11,00,000 = 9,00,000 Hence NPV of the project before is -7,00,000 and after the option is Rs.2,00,000 [-7,00,000 + 9,00,000]

27.	Sensitivity analysis starts with a base case scenario and hence the option about the best case scenario is incorrect
28.	Discount rate = Risk-free rate + Project Beta x (Market return – Risk-free rate) Discount rate = 8% + 1.20 x (13.0% – 8%) = 14.00% We will have to use the expected market return as Return of market in the formula
29.	Initial outlay = Purchase cost of new machine (Rs.10,000) + WC increase (Rs.2,000) – Net salvage value of old machine (6,000 – 1,000) = Rs.7,000
30.	Expected cash flow = [1,00,000 x 20%] + [50,000 x 40%] + [-25,000 x 40%] = Rs.30,000
31.	<table><tr><th>CF</th><th>Prob</th><th>Product</th><th>Deviation</th><th>Pd^2</th></tr><tr><td>100</td><td>0.2</td><td>20</td><td>70</td><td>980</td></tr><tr><td>50</td><td>0.4</td><td>20</td><td>20</td><td>160</td></tr><tr><td>-25</td><td>0.4</td><td>-10</td><td>-55</td><td>1210</td></tr><tr><td>**Total**</td><td></td><td>**30**</td><td></td><td>**2350**</td></tr></table> Standard deviation $= \sqrt{2350} = 48.477$ x 1,000 $=$ Rs. 48,477
32.	Co-efficient of variation = Standard deviation/NPV Project A = 5,00,000/10,00,000 = 0.50 times Project B = 8,00,000/14,00,000 = 0.5714 times Project A is to be selected as the same has lower co-efficient of variation
33.	Discount rate > Cost of Capital Project carries more risk and hence the discount rate should be higher than cost of capital
34.	Project A has a higher CEF whereas Project B has a lower CEF. Higher CEF indicates more certainty and less risky. Hence Project A is less risky and Project B is riskier. **We should therefore use a higher RADR for Project B.**
35.	8% (Risk-free rate is to be used as discount rate under CEF approach)
36.	Certain cash flow = Uncertain cash flow x CEF 2,00,000 = Uncertain cash flow x 0.80 Uncertain cash flow $= \dfrac{2,00,000}{0.80} =$ Rs. 2,50,000
37.	Project is most sensitive to life factor as 10% variation in life has led to maximum impact on NPV
38.	Project is most sensitive to Fixed cost factor. This is because a small deviation of 10% in fixed cost will lead to rejection of the project
39.	aggregate of the expected values of the various branches that emanate from the chance node.
40.	highest amongst the expected values of the various branches that emanate from the decision node
41.	Opportunity outflow is equal to net salvage value of the machine today. <table><tr><th>Particulars</th><th>Amount</th></tr><tr><td>Sale Value</td><td>10,00,000</td></tr><tr><td>Less: Book value [20,00,000 – 3 x 2,50,0000]</td><td>-12,50,000</td></tr><tr><td>Capital loss</td><td>2,50,000</td></tr><tr><td>Tax saved @ 20%</td><td>50,000</td></tr><tr><td>Net salvage value [SV + Tax Saved]</td><td>10,50,000</td></tr></table>
42.	Both (i) and (ii) above
43.	Cost of equity and pre-tax cost of debt
44.	SD of dependent cash flow is more than SD of independent cash flow
45.	FV (inflow) = PV (outlflow)x $(1 + r)^n$ 1,04,896.50 = 50,000 x $(1 + r)^4$ 2.09793 = $(1 + r)^4$; $(1 + r)$ = 1.2035; **Hence MIRR $= 20.35$%**
46.	Probability of correlated cash flows = 30% Probability of independent cash flow = 30% x 30% = 9% Hence 30% and 9% is the answer
47.	Risk can be measured whereas uncertainty cannot be measured
48.	Sensitivity would basically lead to reversal of investment decision. Project currently has positive NPV of Rs.50,000 and the same will get rejected in case outflow increases by Rs.50,000 Sensitivity % of outflow $= \left(\dfrac{50,000}{1,50,000}\right)$ x 100 $=$ 33.33%

49.	Current cost of capital is 12%. If the cost of capital increases by 5% then decision will get reversed. That would basically mean that the project will have zero NPV. Discount rate at which project will have zero NPV = 12 + (5% of 12) = 12.60%. This would basically be the IRR of the project
50.	Accept the Project. The company is using certainty equivalent approach and hence the required return of the project is only risk-free return. IRR > risk-free rate and hence the project is to be accepted
51.	Risk index is basically Beta. RADR = 10 + 2 x (15 – 10) = 20.00%
52.	Probability of earning 24,000 in year 2 = Probability of earning 50,000 in year 1 x Probability of earning 24,000 in year 2 Probability = 40% x 20% = 8.00%
53.	Real cash flow. **Explanation**: When comparing cash flows across different countries with varying inflation rates, it is crucial to use real cash flows. Real cash flows adjust for inflation and provide a standardized measure that allows for an equal comparison of the economic value of the cash flows.

Chapter 4 – Security Analysis

1. The Relative Strength Index (RSI) is a popular technical indicator used in stock market analysis. Which of the following statements accurately describes the RSI?
   a. The RSI measures the volatility of a stock's price.
   b. The RSI indicates the level of buying or selling pressure in the market.
   c. The RSI measures the rate of change in a stock's price.
   d. The RSI predicts the future performance of a stock.

2. What is the primary objective of conducting fundamental analysis of a stock?
   a. Predicting short-term price movements for short-term trading
   b. Identifying undervalued stocks for potential long-term investments
   c. Timing the market to maximize profits during bull runs
   d. Analyzing technical patterns to execute swing trades

3. The Efficient Market Hypothesis (EMH) suggests that:
   a. Stock prices are always perfectly predictable.
   b. Investors can consistently outperform the market by identifying mispriced securities.
   c. Historical price patterns can be used to predict future price movements.
   d. Stock prices reflect all available information and are always fairly valued.

4. The Moving Average Convergence Divergence (MACD) is a technical indicator used in stock market analysis. What does a bullish crossover signal on the MACD chart indicate?
   a. It suggests a potential buying opportunity.
   b. It indicates that the stock is overvalued.
   c. It signals a trend reversal to a bearish market.
   d. It implies that the stock is experiencing high volatility.

5. In _____, factors affecting risk-return characteristics of securities are looked into while in _____, demand/ supply position of the securities along with prevalent share price trends are examined.
   a. Fundamental Analysis and Technical Analysis
   b. Technical Analysis and Fundamental Analysis

6. MBT Corporation recently announced a 15% increase in earnings per share (EPS) over the previous period. The consensus expectation of financial analysts had been an increase in EPS of 10%. After the earnings announcement the value of MBT common stock increased each day for the next five trading days, as analysts and investors gradually reacted to the better than expected news. This gradual change in the value of the stock is an example of:
   a. Speculation
   b. Efficient markets
   c. Inefficient markets

7. Company XYZ recently announced a significant increase in its research and development (R&D) expenses. As an equity researcher, what effect would you expect this announcement to have on the company's future prospects?
   a. It indicates a potential decline in innovation and technological advancements.
   b. It suggests an improved competitive advantage and future growth potential.
   c. It has no bearing on the company's financial performance or stock price.
   d. It signals increased regulatory scrutiny and potential legal challenges.

8. In economic analysis, which technique involves using a set of selected economic indicators, such as stock market performance, unemployment rate, and consumer spending, to predict future economic conditions?

    a. Anticipatory Surveys
    b. Barometer/Indicator Approach
    c. Economic Model Building Approach
    d. Time-Series Analysis

9. According to Dow theory, If the cyclical swings of the stock market averages are successively higher and the successive lows are higher,
    a. Market is in uptrend and is bullish
    b. Market is in downtrend and is bearish
    c. Market is in uptrend and is bearish
    d. Market is in downtrend and is bullish

10. According to Elliott Wave Theory, one complete cycle consists of how many waves?
    a. 3 Waves
    b. 5 Waves
    c. 8 Waves

11. According to Elliott Wave Theory, _____ shall move in the direction of the basic movement
    a. Impulsive patterns
    b. Corrective patterns
    c. Reactive patterns

12. Which of the following factors do not form part of fundamental Analysis?
    a. Economy Analysis
    b. Demand/Supply of stock
    c. Industry Analysis
    d. Company Analysis

13. What is the significance of "secondary movements" in Dow Theory?
    a. They indicate short-term price fluctuations that are irrelevant to the overall market trend.
    b. They confirm the beginning of a new primary trend in the market.
    c. They suggest potential reversals in the primary trend, lasting a few weeks to a few months.
    d. They represent extreme market volatility and should be ignored in technical analysis.

14. In industry analysis, a high industry concentration ratio (percentage of market share held by the largest firms) is an indication of:
    a. Low competition with few dominant firms
    b. High competition with many small firms
    c. Balanced competition with equal market shares
    d. Moderate competition with medium-sized firms

15. Which type of economic indicator is classified as a "lagging indicator" in the barometer/indicator approach and is used to confirm or validate trends in the economy?
    a. Consumer Confidence Index (CCI)
    b. Gross Domestic Product (GDP)
    c. Average Weekly Hours of Work
    d. Retail Sales

16. In the context of the Random Walk Theory, which of the following concepts implies that stock prices reflect both current information and future expectations?
    a. Efficient Market Hypothesis
    b. Behavioral Finance Theory
    c. Mean Reversion

    d.   Technical Analysis

17. Company ABC recently released its quarterly earnings report, surpassing market expectations. However, the stock price experienced a significant drop immediately after the announcement. What could be a possible explanation for this price movement?
    a.   Investors anticipated the positive earnings and had already priced them into the stock.
    b.   The company's management provided a weak guidance for future earnings.
    c.   The stock market, in general, experienced a downturn at the same time.
    d.   The earnings report contained errors, leading to a loss of investor confidence.

18. The random walk theory is a key concept in the Efficient Market Hypothesis (EMH). According to this theory, which of the following statements is true?
    a.   Future stock price movements can be predicted based on past price patterns.
    b.   Stock prices follow a predictable upward or downward trend.
    c.   Stock price movements are independent of each other and cannot be reliably predicted.
    d.   Stock prices fluctuate randomly, but with a clear underlying pattern.

19. Shares of certain business houses command a higher premium than those of similar companies managed by other business houses due to _____
    a.   Competitive advantage
    b.   Growth record
    c.   Quality of management
    d.   Goodwill

20. Which of the following statements is consistent with the implications of the Random Walk Theory on investment strategies?
    a.   Passive investing through index funds is more effective than active stock picking.
    b.   Fundamental analysis can reliably identify undervalued stocks with future price appreciation.
    c.   Technical analysis can predict future stock price movements based on historical price patterns.
    d.   Market timing strategies can outperform the market by predicting short-term price movements.

21. A company's financial statements show a significant increase in its accounts receivable balance compared to previous periods. What would be a prudent action for an analyst conducting fundamental analysis?
    a.   Consider it a positive sign of increasing sales and future profitability.
    b.   Investigate further to determine if there are any underlying issues with revenue recognition or collection
    c.   Ignore the accounts receivable balance and focus on other financial ratios
    d.   Assume it is a temporary fluctuation and does not impact the company's financial health.

22. A technical analyst is using moving averages to identify potential buy or sell signals. The analyst observes that the stock price of Company XYZ has recently crossed above its 50-day moving average. Which interpretation is most likely based on this observation?
    a.   Bullish signal indicating a potential uptrend in the stock.
    b.   Bearish signal indicating a potential downtrend in the stock.
    c.   Neutral signal indicating the stock is likely to trade sideways.
    d.   Inconclusive signal requiring further analysis of other indicators.

23. Technical analysis involves the study of price patterns and trends in historical stock data. Which assumption underlies the principles of technical analysis?

a. The market is always efficient, and all available information is already priced into the stock.
b. Historical price and volume patterns can provide insights into future price movements.
c. Stocks with low price-to-earnings (P/E) ratios tend to outperform those with high P/E ratios.
d. Fundamental analysis is more reliable than technical analysis for predicting stock prices

24. Which chart type is the simplest and least informative, displaying only the closing prices of a security over time without showing any high, low, or open prices?
    a. Line chart
    b. Bar chart
    c. Japanese Candlestick Chart
    d. Point and Figure Chart

25. An equity analyst is evaluating a company's financial performance using fundamental analysis. The analyst examines the company's income statement, balance sheet, and cash flow statement over the past five years. Additionally, the analyst analyzes the company's industry position, competitive advantage, and growth prospects. What tool or method is the analyst primarily using to assess the company's investment potential?
    a. Price-earnings (P/E) ratio and dividend yield analysis.
    b. Discounted cash flow (DCF) valuation model.
    c. Relative valuation by comparing the company's financial ratios to industry peers.
    d. SWOT analysis (Strengths, Weaknesses, Opportunities, Threats).

26. In a Candlestick Chart, White Candlestick indicates a _____ trend and a black candlestick indicates a _____
    a. Bullish trend and no change
    b. Bearish trend and no change
    c. Bullish trend and bearish trend
    d. Bearish trend and Bullish trend

27. Compute the Relative Strength index from the following information:

Average gain over last 14 days	8.00
Average loss over last 14 days	10.00

    a. 55.56
    b. 44.44
    c. 100.00
    d. 80.00

28. In a highly efficient market, such as the one described by the Efficient Market Hypothesis (EMH), what would be the most likely outcome for an investor attempting to consistently outperform the market?
    a. The investor will be able to identify undervalued stocks and generate abnormal returns.
    b. The investor will achieve average market returns but not outperform the overall market.
    c. The investor's portfolio will be in line with the market index and exhibit low volatility.
    d. The investor will be unsuccessful in consistently outperforming the market due to market efficiency.

29. Simple moving average of Sensex for the month of December 2022 is 60,000. You are planning to evaluate the technical strength through EMA. The value of exponent is 0.125. Sensex for 1st trading day stood at 61,000. What would be the new EMA by end of 1st trading day?
    a. 61,000
    b. 60,000
    c. 60,125
    d. 59,875

30. Fundamental analysis is useful for _____ and technical analysis is useful for _____
    a. Long-term investing and short-term investing
    b. Short-term investing and long-term investing

31. Company XYZ is a well-established player in the technology sector. Recently, the company announced a breakthrough innovation in renewable energy technology, which has the potential to disrupt the industry. Analysts predict that this innovation will lead to a significant increase in the company's profits and market share. As an investor analyzing Company XYZ's stock, which approach is most appropriate?
    a. Fundamental analysis, focusing on the company's financial statements and industry trends.
    b. Technical analysis, using charting techniques to identify price patterns and entry/exit points.
    c. Efficient Market Hypothesis, assuming that the market has already priced in the impact of the innovation.
    d. Equity research, examining analyst reports and consensus estimates for the company's future prospects.

32. Compute the confidence index from the following information:

Yield on high-grade bonds	6.00
Yield on low-grade bonds	9.00

    a. 150%
    b. 66.67%
    c. 60.00%
    d. 90.00%

33. Support and resistance levels are essential concepts in technical analysis, representing key price levels at which a stock's price often experiences a halt in its movement. Which of the following statements best describes support levels?
    a. Support levels are price levels where a stock tends to encounter selling pressure, preventing further upward movement.
    b. Support levels are price levels where a stock tends to encounter buying interest, preventing further downward movement.
    c. Support levels are price levels where a stock's trading volume is at its lowest, indicating a lack of market interest.
    d. Support levels are price levels where a stock's price experiences significant volatility, making it challenging to predict future movements.

34. According to the efficient market hypothesis, which form of market efficiency suggests that even private information cannot be used to consistently earn abnormal returns?
    a. Weak form efficiency
    b. Semi-strong form efficiency
    c. Strong form efficiency
    d. Adaptive form efficiency

35. When analyzing a company's financial statements, which of the following ratios would provide insights into its profitability and operational efficiency?
    a. Return on assets (ROA)
    b. Price-earnings (P/E) ratio
    c. Debt-to-equity ratio
    d. Moving average convergence divergence (MACD)

36. Which of the following statements best describes the Breadth Index in the context of the stock market?

    a. The Breadth Index is a technical indicator that measures the strength of a specific sector within the stock market.

    b. The Breadth Index is a fundamental analysis tool that evaluates the financial health of individual companies.

    c. The Breadth Index is a sentiment indicator that measures the overall optimism or pessimism of investors in the market.

    d. The Breadth Index is a breadth indicator that gauges the participation of individual stocks in a market advance or decline.

37. An investor is using exponential moving average for the purpose of technical analysis. What is the value of exponent for 10 days EMA?
    a. 0.2000
    b. 0.1818
    c. 0.2222
    d. 0.4000

38. You have decided to do run-test to check the weak form of efficiency. Number of positive changes = 8 and Number of negative changes = 6. How much is the expected mean of runs?
    a. 7
    b. 7.86
    c. 7.58
    d. 8.00

39. A technical analyst is analyzing a stock's price movements using various technical indicators and chart patterns. Which principle suggests that the stock's price already reflects all available information and, therefore, no further analysis is required?
    a. The Dow Theory
    b. The Random Walk Theory
    c. The Efficient Market Hypothesis
    d. The Elliot Wave Theory

40. A company's stock price has experienced a sudden and significant increase in volume accompanied by a sharp decline in price. What can this combination of price and volume indicate?
    a. Bullish signal
    b. Bearish signal
    c. Trend reversal
    d. Price consolidation

41. Compute breadth index from the following information

Number of securities advanced	25
Number of securities declined	20
Number of securities unchanged	5

    a. 0.11
    b. 0.10
    c. 0.50
    d. 5.00

42. Which chart type is specifically designed to filter out minor price movements and focuses solely on significant price changes to reveal clear trend directions?
    a. Line Chart
    b. Bar Chart
    c. Japanese Candlestick Chart
    d. Point and figure chart

43. According to the efficient market hypothesis, which form of market efficiency suggests that all publicly available information, including historical price data and fundamental analysis, is already reflected in the current stock prices?
    a. Weak form efficiency
    b. Semi-strong form efficiency
    c. Strong form efficiency
    d. Adaptive form efficiency

44. Which of the following factors could weaken a resistance level and increase the likelihood of a breakout in a stock's price?
    a. The stock's trading volume decreases significantly around the resistance level.
    b. Positive news or strong earnings reports are released, boosting investor confidence.
    c. The stock price approaches the resistance level with a sharp uptrend.
    d. Technical indicators show the stock is overbought and due for a correction.

45. According to the efficient market hypothesis, which form of market efficiency suggests that all relevant information, whether public or private, is already incorporated into stock prices?
    a. Weak form efficiency
    b. Semi-strong form efficiency
    c. Strong form efficiency
    d. Adaptive form efficiency

46. Which of the following statements about market efficiency is least accurate?
    a. The strong-form EMH assumes cost free availability of all information, both public and private.
    b. The semi-strong form EMH addresses market and non-market public information
    c. The weak-form EMH suggests that fundamental analysis will not provide excess returns while the semi-strong form suggests that technical analysis cannot achieve excess returns.

47. Which of the following would be inconsistent with an efficient market?
    a. Price changes are independent
    b. Price adjustments are biased
    c. Stock prices adjust rapidly to new information

48. Which of the following forms of the EMH assumes that no group of investors has monopolistic access to relevant information?
    a. Weak-form
    b. Strong-form
    c. Semi-strong form
    d. Both weak and semi-strong form

49. A support level is the price range at which a technical analyst would expect the:
    a. supply of a stock to decrease substantially
    b. demand for a stock to decrease substantially
    c. demand for a stock to increase substantially

50. Elliott wave theory describes the typical pattern of price movements as:
    a. five waves with the direction of the trend, followed by four waves against the direction of the trend
    b. five waves with the direction of the trend, followed by three waves against the direction of the trend
    c. four waves with the direction of the trend, followed by three waves against the direction of the trend.

    d.   Three waves with the direction of the trend, followed by five waves against the direction of the trend.

51. A technical analysis chart that illustrates only the closing prices of a security on each trading day is best described as a:
    a.   Line Chart
    b.   Bar Chart
    c.   Point and Figure Chart
    d.   Candlestick Chart

Answer:

1.	The RSI indicates the level of buying or selling pressure in the market
2.	Identifying undervalued stocks for potential long-term investments
3.	Stock prices reflect all available information and are always fairly valued
4.	It suggests a potential buying opportunity
5.	Fundamental Analysis and Technical Analysis
6.	Inefficient markets **Explanation:** A critical element of efficient markets is that asset prices respond immediately to any new information that will affect their value. Large numbers of traders responding in similar fashion to the new information will create a temporary imbalance in supply and demand, and this will adjust asset market values
7.	It suggests an improved competitive advantage and future growth potential
8.	Barometer/Indicator Approach
9.	Market is in uptrend and is bullish
10.	8 Waves
11.	Impulsive patterns
12.	Demand/Supply of stock
13.	They suggest potential reversals in the primary trend, lasting a few weeks to a few months.
14.	Low competition with few dominant firms
15.	Retail sales. **Explanation:** Retail Sales is classified as a lagging indicator in the barometer/indicator approach. Lagging indicators reflect changes that have already occurred in the economy and are used to confirm or validate trends. Retail sales data measures the total sales of goods and services by retailers and provides insights into consumer spending behavior. As consumer spending is a significant driver of economic growth, changes in retail sales can be used to validate or confirm the current state of the economy. For example, a decline in retail sales may confirm a period of economic slowdown or recession that has already occurred.
16.	Efficient Market Hypothesis
17.	Investors anticipated the positive earnings and had already priced them into the stock.
18.	Stock price movements are independent of each other and cannot be reliably predicted.
19.	Quality of management – This is an intangible factor and the most important factor in company analysis
20.	Passive investing through index funds is more effective than active stock picking **Explanation:** The Random Walk Theory suggests that stock prices are random and cannot be predicted with a high degree of accuracy. As a result, passive investing through index funds, which aim to replicate the performance of a specific market index, is considered more effective than active stock picking
21.	Investigate further to determine if there are any underlying issues with revenue recognition or collection
22.	Bullish signal indicating a potential uptrend in the stock.
23.	Historical price and volume patterns can provide insights into future price movements.
24.	Line Chart
25.	Discounted cash flow (DCF) valuation model
26.	Bullish trend and bearish trend
27.	Relative Strength $= \dfrac{\text{Average gain}}{\text{Average loss}} = \dfrac{8}{10} = 0.80$

	Relative Strength Index $= 100 - \left(\dfrac{100}{1 + RS}\right) = 100 - \left(\dfrac{100}{1 + 0.80}\right) = 100 - 55.56 = 44.44$
28.	The investor will be unsuccessful in consistently outperforming the market due to market efficiency
29.	EMA Adjustment = [Sensex on day 1 – old EMA] x EMA exponent EMA Adjustment = [61,000 – 60,000] x 0.125 = 125 New EMA = Old EMA $\pm$ EMA Adjustment = 60,000 + 125 = 60,125
30.	Long-term investing and short-term investing
31.	Fundamental analysis, focusing on the company's financial statements and industry trends
32.	Confidence index $= \dfrac{\text{Yield on high grade bonds}}{\text{Yield on low grade bonds}} \times 100 = \dfrac{6}{9} \times 100 = 66.67\%$
33.	Support levels are price levels where a stock tends to encounter buying interest, preventing further downward movement
34.	Strong Form Efficiency
35.	Return on assets (ROA)
36.	The Breadth Index is a breadth indicator that gauges the participation of individual stocks in a market advance or decline.
37.	Exponent $= \dfrac{2}{n + 1} = \dfrac{2}{10 + 1} = 0.1818$
38.	Expected mean of runs $= \dfrac{2n_1 n_2}{n_1 + n_2} + 1 = \dfrac{2 \times 8 \times 6}{8 + 6} + 1 = 7.86$
39.	Efficient market Hypothesis
40.	Bearish signal
41.	Breadth index $= \dfrac{\text{Number of securities advanced} - \text{Number of securities declined}}{\text{Total number of securities}} = \dfrac{25 - 20}{25 + 20 + 5}$ Breadth index = 0.10
42.	Point and figure chart **Explanation:** Point and figure charts are specifically designed to filter out minor price movements and focus solely on significant price changes. These charts represent price movements as "X" and "O" columns, where "X" represents upward price movements, and "O" represents downward price movements. The chart ignores the time axis and plots only when a predefined price movement occurs. This filtering technique helps traders identify clear trend directions and significant price levels without the noise of minor fluctuations. Point and figure charts are popular among technical analysts who prioritize trend analysis and wish to avoid unnecessary distractions from minor price movements.
43.	Semi-strong form efficiency
44.	Positive news or strong earnings reports are released, boosting investor confidence
45.	Strong form efficiency
46.	The weak-form EMH suggests that fundamental analysis will not provide excess returns while the semi-strong form suggests that technical analysis cannot achieve excess returns. **Explanation:** The weak-form EMH suggests that technical analysis will not provide excess returns while the semi-strong form suggests that fundamental analysis cannot achieve excess returns. The weak-form EMH assumes the price of a security reflects all currently available historical information. Thus, the past price and volume of trading has no relationship with the future, hence technical analysis is not useful in achieving superior returns.
47.	Price adjustments are biased **Explanation:** Market efficiency assumes that investors adjust their estimates of security prices rapidly to reflect their unbiased interpretation of the new information. New information arrives randomly and independently. Therefore, price changes are independent
48.	Strong-form **Explanation:** According to the strong-form EMH, security prices reflect all information, which includes the privately available (monopolistic) information.
49.	Demand for a stock to increase substantially **Explanation:** Most stock prices remain relatively stable and fluctuate up and down from their true value. The lower limit to these fluctuations is called a support level - the price range where a stock appears cheap and attracts buyers. The upper limit is called a resistance level - the price range where a stock appears expensive and initiates selling

50.	According to Elliott wave theory, prices tend to move in five waves with the direction of the trend and three waves against the direction of the trend
51.	Line chart

Chapter 5 – Security Valuation

1. Share price on January 1 (Purchase date) = Rs.40; Share price on December 31 = Rs.45; Dividend paid (December 31) = Rs.5; Cost of equity = 11%; Cost of debt = 8%; Debt: Equity = 1:3. What is the holding period return (ignore taxes)?
    a. 25.00%
    b. 12.50%
    c. 22.50%
    d. 14.00%

2. Total earnings = 1,00,000; No of equity shares = 1,00,000 of Rs.10 each; Price Earning Multiple = 8 times. The company is currently following 100% payout ratio. What should be the optimum payout ratio as per Walter's Model?
    a. 0%
    b. 100%
    c. Indifferent

3. You want to deposit Rs.10,000 in a bank certificate of deposit (CD). You are considering the following banks:
*   Bank A offers 5.85% annual interest compounded annually
*   Bank B offers 5.75% annual interest rate compounded monthly
*   Bank C offers 5.70% annual interest compounded daily

Which bank offers the highest effective annual interest rate and how much?
    a) Bank C, 5.87%
    b) Bank A, 5.85%
    c) Bank B, 5.90%
    d) Bank B, 5.80%

4. Profit before Tax = 10,00,000; Tax Rate = 50%; No of equity shares of Rs.10 each =50,000; 10% Preference capital = 10,00,000; Reserves and Surplus = Rs.45,00,000; Fictitious assets = 10,00,000. How much is ROE?
    a. 80%
    b. 8%
    c. 40%
    d. 10%

5. Compute the value of a perpetual bond which would pay Rs.100 beginning four years from now. Required return is 10%.
    a. Rs.751
    b. Rs.1,000
    c. Rs.683
    d. Rs.909

6. The company has paid out Dividend of Rs.3 per share based on payout ratio of 50%. Earnings and Dividend will grow at 20 percent for four years. Growth will fall to 10 percent in year 5 and dividend payout ratio will increase to 60%. Cost of equity of the company is 20%. What should be the MPS at the end of year 5?
    a. Rs.90.30
    b. Rs.75.20
    c. Rs.82.10
    d. Rs.68.40

7. Investors' required rate of return is _____?
    a. Cost of equity

    b. Return on equity

    c. Internal Rate of Return

8. EPS = Rs.10; Payout ratio = 25%; Cost of equity = 10%; Return on equity = 5%. What is the price of share as per Walter's model?

    a. Rs.100

    b. Rs.200

    c. Rs.175

    d. Rs.62.50

9. The current share price is Rs.100. Long term growth of 8% is expected. Company is expected to pay a divided of Rs.4 per share next year. What rate of return does an investor expect?

    a. 8%

    b. 12%

    c. 12.32%

    d. 4.32%

10. Book value per share = Rs.100; DPS = Rs.4; Payout ratio = 25%. How much is ROE?

    a. 4%

    b. 1%

    c. 16%

    d. 8%

11. The share price of ABC Limited is Rs.5 per share. There are 50 lac shares outstanding and the company has a book value of Rs.900 lacs. What is the book value per share (BVPS) after the share buyback of Rs.10 lacs?

    a. Rs.18.54

    b. Rs.21.24

    c. Rs.14.76

    d. Rs.18.00

12. The company is paying Dividend of Rs.2 per share. Dividends are currently taxable and investor expects return of 10%. Tax rate is 20%. Dividends have now become exempt but due to imposition of DDT dividend is expected to be 1.80. What will be the price before and after imposition of DDT?

    a. Rs.20 and Rs.18

    b. Rs.16 and Rs.18

    c. Rs.20 and Rs.22.5

    d. Rs.16 and Rs.22.5

13. EPS (100% payout) = Rs.10; MPS = Rs.100. The company is fully equity financed. The company plans to do a project Rs.1 Cr at end of year 1. It will generate Rs.21 lacs from year 2 onwards. How much is project NPV?

    a. Rs.1.1 Crores

    b. Rs.1 Crores

    c. Negative 79 lacs

    d. None of the above

14. Dividend per share is Rs.2. An investor owns 500 shares of company. He wants to continue to earn same amount of dividend income ever year. Dividends will not be paid for next three years. Dividend of year 4 is likely to be Rs.2.50. Growth rate is 7% and cost of equity is 8%. How many shares are to be sold in year 2 to get the minimum amount?

    a. 4 shares

    b. 3 shares

      c.   8 shares

      d.   5 shares

15. IRR of company = 20%; Investor's required rate of return = 15%; Dividend = Rs.2 per share; EPS = Rs.5 per share. What will be the growth rate?

      a.   8%

      b.   12%

      c.   6%

      d.   9%

16. Return on equity = 20%; Cost of equity = 15%; EPS = 10. What will be the limiting value as per walter's model?

      a.   50

      b.   66.67

      c.   88.89

      d.   60

17. MPS of company = Rs.100; EPS of company = Rs.8; Cost of equity = 10%. What is present value of growth opportunities?

      a.   80

      b.   20

      c.   100

      d.   50

18. CMP = 100; Existing shares = 1,00,000; Rights ratio = 1:4; Rights price = 60. What will be the ex-rights price?

      a.   100

      b.   92

      c.   80

      d.   160

19. Existing EPS = 10; No of shares = 1,00,000. PE Multiple = 20. The company does buyback of 20 percent of shares at a premium of 50% to CMP. The same is funded with 10% debt. Tax rate is 30%. What will be the new EPS?

      a.   5

      b.   7.25

      c.   10

      d.   12.50

20. CMP of stock = 50; Rights issue price = 40; Rights ratio = 1:5; what is the value of a right when the stock sells ex-rights at 50?

      a.   8.33

      b.   10

      c.   None of the above

21. CMP = Rs.130; No of shares outstanding = 10 lacs; Company needs to raise 2 Crores for a new project. What will be the ex-rights price if the firm offers rights in the ratio of 1:2?

      a.   130

      b.   93.33

      c.   100

      d.   150

22. The current share price is Rs.100. The rights ratio is 1:4. Rights price is 80. Mr.A hold 1,000 shares and has neither subscribed nor sold rights? What will be the change in networth of Mr A?
    a. No Change
    b. Networth to improve by Rs.1,00,000
    c. Networth to fall by Rs.1,00,000
    d. Networth to fall by Rs.4,000

23. No of shares = 10,000; Share price = Rs.100; Buyback size = 50,000; Current EPS = 3; What will be the post-buyback EPS if the PAT is maintained?
    a. 3
    b. 3.16
    c. 2.85
    d. 3.30

24. PE Multiple of company = 12 times. Company does a project which cost 200 lacs. Company is expected to earn 8 percent on the project. What will be the project NPV?
    a. 192 lacs
    b. 16 lacs
    c. Negative 8 lacs
    d. 8 Lacs

25. Surplus cash = 10 lacs; Buyback size = 30 percent of surplus cash. Current EPS = Rs.10; Current PE multiple = 15 Times. The company plans to do buyback at 20 times of current EPS. How many shares will be bought back?
    a. 2,000 shares
    b. 6,667 shares
    c. 1,500 shares
    d. 5,000 shares

26. Rights issue is made to _____ shareholders and is normally made at price which is _____ than current market price.
    a. New; higher
    b. New; lower
    c. Existing; higher
    d. Existing; lower

27. The cum dividend price of share is Rs.11 (including dividend of Rs.1). Growth rate is 5%. What is cost of equity?
    a. 15.5%
    b. 14.55%
    c. 15%
    d. 14.09%

28. Current market price = Rs.100; Ex-rights price = 80; Rights issue price = Rs.40. What is the rights ratio?
    a. One right share for every one share held
    b. One right share for every two shares held
    c. Two rights share for every one share held
    d. None of the above

29. The current share price is Rs.100. Investor required rate of return is 15 percent. Company plans to pay a Dividend of Rs.25. What is the likely price at end of year?
    a. 100

      b. 115
      c. 90
      d. 125

30. Dividends will grow at 20 percent for four years. Growth will have a linear fall and stabilize at 14 percent. What will be the dividend growth in 6th year?
      a. 20 percent
      b. 14 percent
      c. 19 percent
      d. 18 percent

31. Dividends will grow at 20 percent for four years. Growth will have a linear fall and stabilize at 14 percent in year 7. What will be the dividend growth in 6th year?
      a. 20 percent
      b. 18 percent
      c. 16 percent
      d. 14 percent

32. Dividend of 1996 = Rs.2.115; Dividend of 2002 = Rs.3. The company's earnings and dividend have experience constant growth. What will be the growth rate in dividends using below information? PVF of 5% for 6 years = 0.746; PVF of 6% for 6 years = 0.705; PVF of 7% for 6 years = 0.666
      a. 5%
      b. 6%
      c. 7%
      d. None of the above

33. Beta of company = 1.5; Beta will increase to 2 times after 5 years. Rf = 5%; Rm = 11%. Last year dividend = 10. DPS will grow at 10 percent for 5 years and DPS will grow at 4 percent after 6th year. What will be the value of the share at end of year 5?
      a. 167.40
      b. 128.77
      c. 115
      d. 161

34. Capital gearing ratio of industry = 0.75; Equity share capital of company A = 100; R&S of company = 50; Preference capital = 100; Debt = 200; Required return of industry = 10%. Required return is to be changed by 2 bps for every 1 bps deviation in capital gearing. What is the required return for company A?
      a. 12.50%
      b. 11.25%
      c. 8.75%
      d. 7.50%

35. Mr.A plans to buy shares of company A. The company is expected to give bonus of 1:5 in fourth year. The share is expected to be sold in 7th year at expected price of Rs.900 each. Incidental expense on sale of share is 5%. What will be the net realization per share on sale?
      a. 855
      b. 900
      c. 1080
      d. 1026

36. Present value of future cash inflows = 525. The investor has to be pay 5 percent brokerage on purchase of share. What shall be the maximum purchase price of share?

    a. 525
    b. 500
    c. 498.75
    d. 551.25

37. EPS = 10; Depreciation per share = 20; Capex per share = 30; WC increase per share = 2; Debt ratio = 0.60. What will be FCFE per share?
    a. 10
    b. -2
    c. 5.2
    d. 2.8

38. Beta of company is 1.50 Times. Risk free rate = 10%; Risk premium of market = 20%. Beta will increase to 1.75 Times. How much is the increase in cost of equity due to increase in Beta?
    a. 2.50%
    b. 5.00%
    c. 7.50%
    d. 10.00%

39. Inflation rate = 6%; Real rate of return on investment in A Limited (risky asset) = 10%; Risk premium of A Limited = 4%. What is the risk-free rate of return?
    a. 6%
    b. 16%
    c. 10%
    d. 12%

40. The company has paid a dividend of Rs.10 per share. It was at a payout ratio of 25%. Earnings will grow at 20%. Payout ratio will increase to 60% in year 7. What would be the dividend per share in year 5?
    a. 24.88
    b. 6.22
    c. 49.77
    d. 99.53

41. DPS (D0) = Rs.10; Payout ratio = 50%; Current PE Multiple = 10 Times. What is the implied growth rate if cost of equity is 20%?
    a. 14.92%
    b. 15.00%
    c. 14.29%
    d. None of the above

42. Cum-dividend price of share = Rs.400; Dividend = Rs.20. Five shares underly each GDR. Shares will be priced at discount of 20%. Exchange rate is Rs.100/USD. what is the net realization (in USD) per GDR if floatation cost is 5%?
    a. 16
    b. 15.20
    c. 14.44
    d. None of the above

43. Net Amount to be raised = 10,00,000; Issue expenses = 5%. What is the gross amount to be raised?
    a. 9,50,000
    b. 10,50,000
    c. 10,52,632

     d. 9,52,381

44. Earnings of previous year= Rs.10; Earnings growth of year 1 = 10% and growth rate will decrease by 1% per year. PE Multiple of year 5 = 20 Times. What is the likely price at end of year 5?
     a. 293.80
     b. 322
     c. 200
     d. 250

45. Current capital employed = 2,000 lacs; Current EBIT = 200 lacs. The company plans to raise Rs.400 lacs in the form of debt or equity. Return is expected to increase by 2%. What will be the new EBIT of next year?
     a. 200 lacs
     b. 240 lacs
     c. 288 lacs
     d. 204 lacs

46. Industry sales = 2,000 lacs; ABC's market share = 25%; GP margin = 40%; Expenses other than COGS is half of COGS. For the next year industry will grow by 10% and ABC's market share will increase to 30%. What will be the PAT of next year?
     a. 50 lacs
     b. 66 lacs
     c. 200 lacs
     d. 264 lacs

47. Dividends are likely to grow at around 20 percent. Current market price of share is Rs.68.20. Share is likely to quote at Rs.100 in year 4. Return required by shareholders is 20%. Compute Current dividend per share (D0). PVF of year 1 is 0.833; PVF of year 2 is 0.94; PVF of year 3 is 0.579; PVF of year 4 is 0.482.
     a. 7.95
     b. 3.84
     c. 5.00
     d. None of the above

48. Face value of bond = Rs.100; Rate of interest on bond = 8%; Return on similar bonds = 9.5%. Term = 4 years. Bond is convertible into 5 shares. CMP of equity share = 15. What is bond's conversion value?
     a. 100
     b. 95.24
     c. 75
     d. 15

49. Face value of bond = Rs.100; CMP of bond = Rs.100 Rate of interest on bond = 8%; Return on similar bonds = 9.5%. Term = 4 years. Bond is convertible into 5 shares. CMP of equity share = 15. What is bond's conversion premium per share?
     a. 20
     b. 15
     c. 5
     d. 25

50. Face value of bond = Rs.100; CMP of bond = Rs.100; Rate of interest on bond = 8%; Return on similar bonds = 9.5%. Term = 4 years. Bond is convertible into 5 shares. CMP of equity share = 15. What is conversion parity price?
     a. 20

    b. 15
    c. 100
    d. 10

51. Face value of bond = Rs.100; Rate of interest on bond = 8%; Return on similar bonds = 9.5%. Term = 4 years. Bond is convertible into 5 shares. CMP of equity share = 15. What is bond's straight value?
    a. 100
    b. 75
    c. 95.26
    d. 89.67

52. Face value of bond = Rs.100; CMP of bond = Rs.100; Rate of interest on bond = 8%; Return on similar bonds = 9.5%. Term = 4 years. Bond is convertible into 5 shares. CMP of equity share = 15. What is downside risk (in Rs.)?
    a. 0
    b. 10.33
    c. 5.78
    d. 25

53. Face value of bond = Rs.100; Interest rate on bond = 10%. Bond is convertible into 10 shares. Likely dividend per share is Rs.0.2. What is favorable income differential per share?
    a. 9.80
    b. 0.20
    c. 0.80
    d. 8.00

54. Existing EPS = Rs.2; Existing no of shares = 1,00,000. Company plans to issue 7% preference capital of Rs.10,00,000. What should be the increase in earnings post preference issue to maintain EPS?
    a. No change required
    b. Increase by 7%
    c. Increase by 35%
    d. Increase by 70%

55. Conversion premium per bond = Rs.100. One bond is convertible into 10 shares. Favorable income differential per share = Rs.4. How much is the premium payback period?
    a. 25 years
    b. 2.5 years
    c. 10 years
    d. None of the above

56. Face value = Rs.1,000; Rate of interest = 10%. The bond is convertible into 10 equity shares whose current market price is Rs.80. Growth rate in equity share is 10%. What will be the terminal cash flow at end of year 5?
    a. 800
    b. 1,000
    c. 1,288.41
    d. None of the above

57. CMP of bond = Rs.1,200. One bond is convertible into 10 shares. CMP of share is Rs.125. Should the investor opt for conversion?
    a. Yes
    b. No
    c. Investor would be indifferent on conversion

58. The nominal value of 10% bond is Rs.100. The redeemable value is Rs.120 in two years. Investor's expected rate of return is 14%. What should be the value of bond?
    a. 140
    b. 71.43
    c. 108.74
    d. 104

59. The company needs to earn income of Rs.7.38 crores on 100 crores to earn its target return after paying management expenses of 10% of amount of income generated. What is the gross amount to be earned?
    a. 7.38 crores
    b. 6.64 crores
    c. 8.20 crores
    d. None of the above

60. YTM of convertible bond = 10.76%. Yield of comparable bond is 9%. What is the spread of yield of convertible bond from that of comparable bond?
    a. 10.76%
    b. 9.00%
    c. +1.76%
    d. -1.76%

61. A company issues a variable bond where interest rate changes based on prevailing interest rates. Bond was issued when interest rate was 10%. It has remaining life of two years and the interest rate is now 8%. What will be the value of bond today if face value is Rs.1000?
    a. 1,000
    b. 1,035.30
    c. 900
    d. None of the above

62. You have invested in 8.5% bond with face value of Rs.1,000. Reinvestment rate is 10 percent and has 3 years to maturity. What is the reinvested interest on this bond
    a. 26.35
    b. 54.48
    c. 309.48
    d. 281.35

63. Duration of portfolio is 8 years. Yield is expected to increase in current year. Which action should be taken by the investor?
    a. No action to be taken
    b. Increase investment in lower duration bonds by selling higher duration bonds
    c. Increase investment in higher duration bonds by selling lower duration bonds
    d. Increase investment in both higher and lower duration bonds

64. The current market price of bond is Rs.140. Bond is convertible into 20 shares. At what price should the investor opt for conversion?
    a. 5
    b. 6
    c. 8
    d. None of the above

65. 11% preference shares of Rs.100 is currently quoted at yield of 13%. What should be the current market price?
    a. 100
    b. 84.62
    c. 118.18
    d. None of the above

66. Net depreciated value of mortgage assets should be twice the value of debt. Company currently has debt of Rs.8 Crores and mortgaged assets of Rs.30 Crores. New debt taken will be deployed 50 percent towards purchase of mortgaged assets. How much debt can the company raise?
    a. 7 Crores
    b. 9.33 Crores
    c. 52 crores
    d. None of the above

67. 10% bond was issued with life of 10 years. There was a clause to redeem/extend the bond by 5 years at the end of year 5. Interest rates at end of year 5 is 12%. What action will be taken by company at end of year 5?
    a. Company will extend the bond by 5 years
    b. Company will redeem the bond

68. 10% bond pays interest in September and March of every year. Face value is Rs.100. YTM is 12%. What will be current market price with balance life of 2 years?
    a. 96.6
    b. 107.33
    c. 96.53
    d. 109.89

69. Duration of half-yearly bond = 5.85 years; YTM = 10%. What will be the volatility of bond?
    a. 5.32
    b. 5.57
    c. 6.44
    d. 6.14

70. Volatility = 4.5. Yield is expected to increase by 25 bps. What will be the effect on current market price?
    a. Price will increase by 4.5%
    b. Price will increase by 1.125%
    c. Price will decrease by 4.5%
    d. Price will decrease by 1.125%

71. Bond was issued 5 years ago with flotation cost of Rs.30 lacs. It has balance life of 25 years. Tax rate is 30%. Bond is to be replaced with new bond. What will be tax benefit on flotation cost?
    a. 9 lacs in day 0
    b. 7.5 lacs in day 0
    c. 30,000 for year 1 to year 30
    d. 30,000 for year 1 to year 25

72. Face value of bond = Rs.200 lacs; Call premium = 10%. Balance life = 10 years. Tax rate = 20%. What will be the tax benefit on call premium?
    a. Rs.4 lacs in day 0
    b. Rs.40,000 from year 1 to year 10
    c. Rs.40 lacs in day 0

d. Rs.4 lacs from Year 1 to Year 10

73. 10% Govt of India security is quoted at 125 (Face value of Rs.100). Yield is expected to go up by 1 percent. What will be the revised price?
    a. 90.91
    b. 111.11
    c. 100
    d. None of the above

74. MP as on Jan 1, 2019 = Rs.100. Face value of Rs.100 and interest rate is 10%. Interest is payable half-yearly on June 30 and December 31. What will be price of the bond on Oct 1, 2019?
    a. 107.50
    b. 100
    c. 102.50

75. Treasury bill rate = 9%; Discount rate for A rated bond = T bill rate + 3%; Discount rate for AA rated bond = AAA rate + 1%; Discount rate for AAA rated bond = A rated bond - 2%. What should be the discount rate for AA rated bond?
    a. 9%
    b. 12%
    c. 11%
    d. 10%

76. YTM of perpetual bond = 8%. What is its duration?
    a. 12.5 years
    b. 8 years
    c. 9 years
    d. 13.5 years

77. Life of annuity bond = 4 years; Interest rate = 12%; Face value = Rs.1,000. What will be the annual cash flow?
    a. 250
    b. 329.27
    c. 370

78. 1 year interest rate = 10 percent; 2 year interest rate = 12 percent; What will be the forward rate of year 1?
    a. 14%
    b. 11%
    c. 14.04%

79. CMP of T-bill on March 31= 95,000. Maturity date = July 20; Face value = 1,00,000. What is the yield on treasury bill?
    a. 5%
    b. 5.26%
    c. 16.44%
    d. 17.30%

80. Duration of Bond A = 4 years; Duration of Bond B = 10 years; Investor needs money after 6 years. What should be the investment in Bond A and Bond B?
    a. 50% and 50%
    b. 100% in Bond A
    c. 66.67% in A and 33.33% in B

      d. 66.67% in B and 33.33% in A

81. Interest rate on Bond = 10%; YTM of bond = 12%; what will the bond quote at?
    a. Bond will quote at premium
    b. Bond will quote at discount
    c. Bond will quote at par

82. A security has required return of 25% and the expected return of the security is 20%. Identify the alpha of security and decide the action to be taken by investor.
    a. Positive Alpha and Buy security
    b. Positive Alpha and Sell security
    c. Negative Alpha and Buy security
    d. Negative Alpha and sell security

83. 14% bond is quoted at Rs.90. what is current yield if interest is payable half-yearly?
    a. 14%
    b. 7%
    c. 7.78%
    d. 15.56%

84. CMP of bond = Rs.1,000; Face value of bond = Rs.1,000; Interest rate on bond = 12%; YTM of bond = 15%. What will be the price at end of year 2?
    a. 1,000
    b. 1064.50
    c. 1,060
    d. 940

85. Discount rate for year 1 = 10%. Discount rate increases by 2% per year. What will be the PVF for year 3?
    a. 0.751
    b. 0.675
    c. 0.712
    d. None of the above

86. The company plans to issue 10% debentures. Yield on similar debenture is 15%. The company plans to issue in such a manner it gives 18% return to investors. What should be the discount rate for valuation of bond?
    a. 10%
    b. 15%
    c. 18%

87. Issue price of bond = Rs.80; Redemption value in year 5 = Rs.120; Face value of bond = Rs.100; Interest rate on bond = 10%; Tax rate on interest = 30%; Tax rate on capital gain = 20%. What will be the post-tax cash flow of year 5?
    a. 130
    b. 120
    c. 119
    d. 123

88. Current interest coverage = 4 Times. EBIT will increase by 20% and interest will increase by 40%. What will be the revised interest coverage?
    a. Cannot be calculated
    b. 4 Times

    c.   3.43 Times

    d.   2.88 Times

89. You are investing money in Security X which has Beta of 2 Times. You are trying to assess the required return of Security X and want to compute the equity risk premium of Security X. What is the likely risk premium of Security X?
    a. Nil
    b. Greater than market risk premium
    c. Lower than market risk premium
    d. Equal to market risk premium

90. Enterprise value of Infosys - 1,000 Crores. EBITDA of Infosys - 250 Crores. What should be the enterprise valuation of TCS if EBITDA of TCS is 50 Crores?
    a. 1000 Crores
    b. 50 Crores
    c. 200 Crores
    d. 250 Crores

91. Core enterprise value is equal to _____?
    a. Total enterprise value - value of non-core assets
    b. Operating enterprise value - investment in associates
    c. Total enterprise value - value of non-core assets - investment in associates

92. TCS has preferred stock outstanding that pays an annual dividend of Rs.3.75 per share. If an investor wants to earn a rate of return of 8.5%, how much should he be willing to pay for a share of TCS?
    a. Rs.31.88
    b. Rs.44.12
    c. Rs.42.10
    d. Rs.50.00

93. Book value of equity = 1000; Market value of equity = 2000; Reserves and surplus = 200; Value of debt = 800; Cash and cash equivalents = 400. How much is enterprise value?
    a. 1600
    b. 2400
    c. 2600
    d. 1800

94. YTM of a bond instrument is 20% and the re-investment rate is 15%. What is the likely realized Yield of the bond?
    a. 20%
    b. Greater than 20%
    c. Less than 20%

95. EV to sales multiple of industry = 1.5 times; EV to EBITDA multiple of industry = 5 times; Sales of ABC Limited = 5,000; EBITDA of ABC Limited = 2,000; What should be the value of ABC Limited?
    a. 7,500
    b. 10,000
    c. 8,750
    d. None of the above

96. PAT = 280 Crores; Tax Rate = 30%; Depreciation = 100 Crores; Interest = 500 Crores. Industry has EV to EBITDA multiple of 5 times. How much should be the enterprise value?
    a. 4,400 Crores

b. 1,400 Crores
c. 5,000 Crores
d. 3,000 crores

97. Which of the following points is/are true about duration of bonds?
(i)   The shorter-maturity bond would have a lower duration and vice versa
(ii)   The higher the coupon, the lower is the duration and vice versa
(iii)   Higher YTM would lead to higher duration and lower YTM would lead to lower duration
a) (i) and (ii) is correct
b) (i), (ii) and (iii) is correct
c) (i) and (iii) is correct
d) (ii) and (iii) is correct

98. Bank A entered into repo transaction at the rate of 8% on 12% GOI Bond, 2021. Clean price of the instrument is Rs.95 and face value is Rs.100. 240 days of accrued interest is applicable and number of days in a year is 360. What is the dirty price?
   a. 95
   b. 100
   c. 100.33
   d. 103

99. Under an _____ yield curve, long-term interest rates will be lower than short-term interest rates
   a. Upward sloping
   b. Downward sloping
   c. Flat
   d. Humped

100.Investment in A Limited earns return of 2% per quarter. The company has Rs.40,00,000 to invest and cost of making an investment is Rs.40,000. How much should be the investment period to break-even?
   a. 1.5 months
   b. 3 months
   c. 6 months
   d. 12 months

101.Amount of face value for repo transaction = 4 crores. Initial margin = 5%. Clean price = Rs.98. Accrued interest = Rs.4. what is the first leg proceeds?
   a. 3.80 crores
   b. 3.724 crores
   c. 3.876 crores
   d. None of the above

102.Interest cost of CP = 2.5 percent per quarter; Issue period of CP = 6 months; Stamp duty = 0.5 percent of issue size; Rating charges = 1 percent per annum; Other charges = 0.1 percent per month. How much is the overall annual cost of CP issue?
   a. 13.2 percent
   b. 14.2 percent
   c. 8.2 percent
   d. 9.2 percent

103.An increase in interest rate in the market will have _____ impact on reinvestment and _____ impact on price
   a. Adverse and Adverse

b. Favourable and Favourable
c. Favourable and Adverse
d. Adverse and Favourable

104. RBI Sold 91 days treasury bill of Rs.100 with yield of 12 percent. What is the issue price?
   a. 97.01
   b. 97.10
   c. 98.00
   d. None of the above

105. ABC Limited has a leading price-to-earnings (P/E) ratio of 28 while the median leading P/E of a peer group of companies within the industry is 38. Based on the method of comparables, an analyst would most likely conclude that ABC Limited should be:
   a. bought as an undervalued stock
   b. sold short as an overvalued stock
   c. sold as an overvalued stock
   d. bought as an overvalued stock

106. Face value of CP = 100 lacs; Interest expense on CP = 4 lacs; The firm is required to keep balance of Rs.5 lacs in line of credit. Issue period of CP = 6 months. What is the annual cost of CP?
   a. 8 percent
   b. 8.33 percent
   c. 8.79 percent
   d. 19.78 percent

107. Bank A entered into repo on 12% GOI Bond. Initial proceeds is Rs.7,95,20,000. Repo period was for 14 days and rate of interest on repo is 5%. What is the amount to be repaid?
   a. 7,96,72,504
   b. 7,98,86,010
   c. 7,98,90,093
   d. 7,96,74,622

108. Valuation is an essential process used in finance to determine the intrinsic value of an asset. It involves assessing various factors and methodologies to estimate the worth of the asset. Which of the following statements best describes the purpose of valuation?
   a. Valuation aims to determine the historical cost of an asset.
   b. Valuation provides an accurate prediction of an asset's future market price.
   c. Valuation aims to estimate the fair value of an asset based on its characteristics and market conditions.
   d. Valuation focuses on calculating the present value of an asset's future cash flows.

109. A bond is quoting at premium today. The bond will be redeemed after 10 years at par value. What is the likely price at end of year 1?
   a. No change in bond price
   b. Fall in bond price as compared to today price
   c. Increase in bond price as compared to today price
   d. Cannot be ascertained

110. In finance, return concepts play a crucial role in assessing investment performance and decision-making. Which of the following statements accurately defines the concept of total return?
   a. Total return measures the percentage increase in an investment's market value.
   b. Total return includes only the income generated from an investment, such as dividends or interest.

    c. Total return combines the capital appreciation or depreciation of an investment with the income generated over a specific period.

    d. Total return represents the risk-adjusted return of an investment compared to a benchmark index.

111. The required return on equity is a crucial concept in finance that helps investors and analysts evaluate the attractiveness of equity investments. What factors contribute to determining the required return on equity?
    a. The company's cost of debt and its interest coverage ratio.
    b. The company's market capitalization and share price volatility.
    c. The company's beta, risk-free rate, and equity risk premium.
    d. The company's dividend payout ratio and earnings per share.

112. What is one precaution a valuer should take before accepting a valuation assignment?
    a. Conducting independent research on the asset being valued
    b. Assuring a high profit margin from the assignment
    c. Accepting the assignment without considering potential conflicts of interest
    d. Guaranteeing the accuracy of the valuation result

113. EV to EBITDA multiple of Company A is 5 Times. How much is the cash return on total investment?
    a. 5%
    b. 10%
    c. 20%
    d. 25%

114. When valuing debentures/bonds, which of the following factors has the most significant impact on their value?
    a. Maturity date of the debentures/bonds
    b. Coupon rate of the debentures/bonds
    c. Credit rating of the issuing company
    d. Market interest rate

115. When valuing preference shares, which of the following factors is most important in determining the value?
    a. Dividend yield of the preference shares
    b. Conversion feature of the preference shares
    c. Face value of the preference shares
    d. Credit rating of the issuing company

116. _____ can be used for valuation of a company which has negative cash flows or negative earnings.
    a. EV to EBITDA
    b. PE Multiple
    c. EV to Sales

117. What is one precaution a valuer should take to ensure independence in the valuation process?
    a. Avoiding conflicts of interest with the client
    b. Guaranteeing a minimum value for the asset
    c. Relying solely on the client's provided data and information
    d. Establishing personal relationships with the client

118. A company is evaluating the value of its equity shares using the Return on Equity (ROE) analysis. The company has a net income of Rs.10,00,000 and shareholders' equity of Rs.1,00,00,000. The

industry average ROE is 15%. What is the estimated value of the company's equity shares based on the ROE analysis?

    a. Rs.66,66,667
    b. Rs.83,33,333
    c. Rs.1,00,00,000
    d. Rs.1,25,00,000

119. A company has generated an operating cash flow of Rs.20,00,000, incurred a capital expenditure of Rs.5,00,000, and paid dividends of Rs.3,00,000 to equity shareholders. The interest expense on debt is Rs.1,00,000, and the principal repayment is Rs.2,00,000. What is the Free Cash Flow to Firm (FCFF) for the company?

    a. Rs.25,00,000
    b. Rs.14,00,000
    c. Rs.15,00,000
    d. Rs.18,00,000

120. An equity share can be valued using dividend discount model and cash flow-based model. Which of the models provide a better measure of valuation?

    a. Dividend discount model
    b. Cash flow-based model
    c. Both models are similar

121. A company is considering a major expansion project and wants to evaluate the cash flows available to both debt and equity stakeholders. Which of the following components is included in the calculation of Free Cash Flow to Firm (FCFF)?

    a. Dividends paid to equity shareholders
    b. Interest expenses on debt
    c. Principal repayments on debt
    d. Capital expenditures

122. A company is planning to acquire a target company that has a substantial amount of cash and cash equivalents on its balance sheet. How should the cash and cash equivalents be treated when calculating the enterprise value?

    a. Deduct the value of cash and cash equivalents from the enterprise value.
    b. Add the value of cash and cash equivalents to the enterprise value.
    c. Ignore the value of cash and cash equivalents when calculating the enterprise value.
    d. Consider the value of cash and cash equivalents separately from the enterprise value.

123. A company has issued a warrant which can be converted into 10 equity shares by paying Rs.50 per share. The current market price of the share is Rs.80. How much is the value of warrant?

    a. 0
    b. Rs.800
    c. Rs.500
    d. Rs.300

124. _____ is the rate at which RBI lends to commercial bank and _____ is the rate at which commercial bank lends to RBI

    a. Repo rate and Bank rate
    b. Reverse repo rate and Bank rate
    c. Reverse repo rate and Repo Rate
    d. Repo Rate and Reverse Repo Rate

125. A seller discounted a commercial bill (2 months maturity) at 15% per annum. How much would be the effective yield of the bank?
    a. 15%
    b. More than 15%
    c. Less than 15%

126. A company has issued a warrant which can be converted into 10 equity shares by paying Rs.50 per share. The current market price of the share is Rs.40. How much is the value of warrant?
    a. 0
    b. -100
    c. 400
    d. 500

127. A company is considering acquiring another firm to expand its operations. The target company has a significant amount of debt. Which of the following valuation methods would be most appropriate to determine the enterprise value of the target company?
    a. Dividend Discount Model (DDM)
    b. Price/Earnings (P/E) Ratio Method
    c. Discounted Cash Flow (DCF) Analysis
    d. Market Capitalization Method

128. XYZ Corporation has issued a zero-coupon bond with a face value of Rs.1,000 and a maturity period of 5 years. The current market interest rate is 8%. Calculate the fair price of the bond?
    a. Rs.680.58
    b. Rs.735.03
    c. Rs.793.83
    d. Rs.857.34

129. Which of the following statements about bond immunization is true?
    a. Bond immunization eliminates the risk of default associated with bonds.
    b. Immunization involves matching the duration of a bond portfolio with the investment time horizon.
    c. The primary goal of immunization is to maximize the bond portfolio's total return.
    d. Immunization strategies are effective only for short-term bonds.

130. Calculate value of equity share using H Model from the following information:

Dividend paid in last year	Rs.25
Cost of equity	8%
High-growth rate (short-term growth)	12%
Long-term growth rate	5%
Number of years for transition from high-growth to normal rate	5 years

    a. 875
    b. 1020.83
    c. 1025
    d. 1,000

131. Which of the following statements about bond duration is true?
    a. Bond duration measures the time it takes to recoup the initial investment in a bond.
    b. The duration of a bond is always shorter than its maturity period.
    c. Longer-term bonds have higher durations than shorter-term bonds.
    d. The duration of a zero-coupon bond is always zero.

132. Which of the following yield curve shapes is often associated with a period of economic stability and balanced growth?

a. Steep yield curve
b. Flat yield curve
c. Inverted yield curve
d. Humped yield curve

133. Which of the following term structure theories incorporates both expectations about future interest rates and market segmentation?
   a. Expectations Theory
   b. Liquidity Preference Theory
   c. Preferred Habitat Theory

134. Which of the following Yield Curve will exist under the Liquidity Preference Theory of the term structure of interest rates?
   a. Downward Sloping
   b. Upward Sloping
   c. Flat
   d. Humped

135. Which of the following factors does not affect the price of a zero-coupon bond?
   a. Yield to maturity
   b. Maturity period
   c. Credit rating of the issuer
   d. Coupon rate

136. Duration/volatility assumed a _____ relationship between Yield change on price
   a. Exponential
   b. Random
   c. Linear
   d. Flat

137. For valuing an equity share, Which discount rate is to be used?
   a. Nominal cost of equity
   b. Real cost of equity

138. Which of the following statements best describes the components of the required interest rate on a security?
   a. The real risk-free rate, the default risk premium, a liquidity premium and a premium to reflect the risk associated with the maturity of the security
   b. The real risk-free rate, expected inflation rate, the default risk premium, a liquidity premium and a premium to reflect the risk associated with the maturity of the security
   c. The nominal risk-free rate, expected inflation rate, the default risk premium, a liquidity premium and a premium to reflect the risk associated with the maturity of the security
   d. a liquidity premium and a premium to reflect the risk associated with the maturity of the security

139. Which of the following statements is true regarding the impact of bond refunding on the company's cash flows?
   a. Bond refunding increases the company's cash outflows in the short term.
   b. Bond refunding decreases the company's cash outflows in the short term.
   c. Bond refunding does not impact the company's cash flows.
   d. Bond refunding increases the company's cash inflows in the short term.

140. Compute Convexity of bond based on the following information:

Fair value of bond at 10% YTM	100.00
Fair value of bond at 9% YTM	103.89
Fair value of bond at 11% YTM	96.30

     a. 9.50
     b. 0.095
     c. 0.19
     d. 19.00

141. XYZ Corporation issued a bond with a coupon rate of 7% and a maturity of 20 years. However, due to declining interest rates, the company decides to refund the bond by issuing a new bond at a lower coupon rate. Which of the following statements is true regarding bond refunding?
     a. Bond refunding increases the company's overall interest expense.
     b. Bond refunding reduces the company's future interest payments.
     c. Bond refunding requires the company to retire the existing bond before issuing a new one.
     d. Bond refunding increases the credit risk of the company.

142. Nominal and real cash flows will be same _____
     a. In the short run and under conditions of high inflation
     b. In the short run and under conditions of low inflation
     c. In the long run and under conditions of high inflation
     d. In the long run and under conditions of low inflation

143. A company is considering investing its surplus funds in money market instruments. Which of the following money market instruments offers the highest level of liquidity and safety?
     a. Treasury bills
     b. Commercial paper
     c. Certificate of deposit
     d. Repurchase agreements

144. Which of the following money market instruments is typically issued by large, creditworthy corporations to meet their short-term funding needs?
     a. Treasury bills
     b. Commercial paper
     c. Banker's acceptances
     d. Negotiable certificates of deposit

145. A company currently has a required return on equity of 14% and an ROE of 12%. All else equal, if there is an increase in a firm's dividend payout ratio, the stock's value will most likely:
     a. Increase
     b. Either increase or decrease
     c. No effect
     d. Decrease

146. The six-year spot rate is 7% and the five-year spot rate is 6%. The implied one-year forward rate five years from now is:
     a. 6.50%
     b. 12.14%
     c. 5.00%
     d. 12.00%

147. A bond portfolio consists of a AAA bond, a AA bond, and an A bond. The prices of the bonds are Rs.1,050, Rs.1,000, and Rs.950 respectively. The durations are 8, 6, and 4 respectively. What is the duration of the portfolio?
     a. 6.00

b. 6.07
c. 6.67
d. 18.00

Answer:

1.	Holding period return $= \dfrac{(45 - 40) + 5}{40} \times 100 = 25.00\%$
2.	$\text{ROE} = \dfrac{\text{Total earnings}}{\text{Value of equity}} = \dfrac{1,00,000}{10,00,000} = 10.00\%$ $\text{Cost of equity} = \dfrac{1}{\text{PE Multiple}} = \dfrac{1}{8} = 12.50\%$ **Optimum payout ratio for the company would be 100% as cost of equity is higher than ROE**
3.	Answer to this is Bank B and 5.90% Effective rate of Bank A = 5.85% Effective rate of Bank B $= \left(1 + \dfrac{5.75\%}{12}\right)^{12} - 1 = 5.90\%$ Effective rate of Bank C $= e^{rt} - 1 = e^{0.057} - 1 = 1.0587 - 1 = 5.87\%$

4.	Particulars	Amount
	Profit before tax	10,00,000
	Less: Tax @ 50%	-5,00,000
	Profit after tax	**5,00,000**
	Less: Preference dividend (10,00,000 x 10%)	-1,00,000
	EAES	**4,00,000**
	Amount of equity [Equity share capital + Reserves – Fictitious assets]	40,00,000
	ROE [EAES/Amount of equity]	**10.00%**

5.	Answer to the question is Rs.751 $P_3 = \dfrac{CF_4}{RR} = \dfrac{100}{10\%} = RS.\,1,000$ $P_0 = 1,000 \times PVF\,(10\%, 3) = 1,000 \times 0.751 = Rs.\,751$

6.	Particulars	Amount
	EPS of last (DPS/Payout ratio)	6.00
	EPS of year 1 (6 + 20%)	7.20
	EPS of year 2 (7.20 + 20%)	8.64
	EPS of year 3 (8.64 + 20%)	10.37
	EPS of year 4 (10.37 + 20%)	12.44
	EPS of year 5 (12.44 + 10%)	13.68
	EPS of year 6 (13.68 + 10%)	15.05
	DPS of year 6 (15.05 x 60%)	9.03
	Price of year 5 $= \left(\dfrac{D_6}{K_e - G}\right) = \left(\dfrac{9.03}{20\% - 10\%}\right)$	90.30

7.	Cost of equity
8.	$P_0 = \left(\dfrac{D}{K_e}\right) + \dfrac{\left(\dfrac{r}{K_e}\right) \times (E - D)}{K_e} = \left(\dfrac{2.50}{10\%}\right) + \dfrac{\left(\dfrac{0.05}{0.10}\right) \times (10 - 2.50)}{10\%} = Rs.\,62.50$
9.	$K_e = \left(\dfrac{D_1}{P_0}\right) + G = \dfrac{4}{100} + 0.08 = 0.12 \text{ or } 12\%$

10.	Particulars	Amount
	EPS (DPS/Payout ratio)	16.00
	Book value per share	100
	ROE (EPS/BVPS x 100)	16.00%

11.	Book value per share $= \dfrac{900 \text{ lacs} - 10 \text{ lacs}}{50 \text{ lacs} - 2 \text{ lacs}} = Rs.\,18.54$ per share **Note:** Networth will decline by Rs.10 lacs on buyback. It is assumed that buyback is happening at current market price and hence number of shares bought back is 2 lacs.
12.	If dividends are taxable then we should take cost of equity as pre-tax (10%) and if dividends are exempted (after-tax) then we should take cost of equity as post-tax

	$\text{Price before DDT} = \left(\dfrac{2}{10\% - 0\%}\right) = \text{Rs. }20$ $\text{Price after DDT} = \left(\dfrac{1.80}{8\% - 0\%}\right) = \text{Rs. }22.50$
13.	Company is following 100% payout ratio and hence EPS = DPS. Additionally, growth rate will also be zero. $K_e = \left(\dfrac{10}{100}\right) + 0 = 10\%$ <table><tr><th>Year</th><th>Cash flow</th><th>PVF @ 10%</th><th>DCF</th></tr><tr><td>1</td><td>-1.00</td><td>0.909</td><td>-0.909</td></tr><tr><td>1</td><td>2.10 [21/10%]</td><td>0.909</td><td>1.909</td></tr><tr><td colspan="3">NPV of project</td><td>1.000</td></tr></table> **Note:** Perpetual cash flow is received from year 2 and it is to be valued a year in advance (year 1)
14.	$P_3 = \dfrac{D_4}{K_e - G} = \dfrac{2.50}{8\% - 7\%} = \text{Rs. }250$ $P_2 = \dfrac{P_3}{1 + K_e} = \dfrac{250}{1 + 8\%} = Rs.\,231.48$ $\text{No of shares to be sold in year 2} = \dfrac{\text{Amount needed}}{\text{Price}} = \dfrac{1,000}{231.48} = 4.32 \text{ shares}$ 4.32 shares will be rounded off to 5 as investor needs minimum 1,000. Sales of 4 shares will not give Rs.1,000
15.	<table><tr><th>Particulars</th><th>Amount</th></tr><tr><td>Payout ratio (DPS/EPS)</td><td>40.00%</td></tr><tr><td>Retention ratio (100% – Payout ratio%)</td><td>60.00%</td></tr><tr><td>Growth rate (IRR x Retention ratio)</td><td>12.00%</td></tr></table>
16.	The return on equity is 20% whereas cost of equity is 15%. This is a case of declining firm and hence optimum payout ratio is 0%. Limiting value is minimum possible value of a share and is computed by following a payout ratio which is opposite of optimum payout ratio. Hence, we will work with 100% (opposite of 0%) and compute the answer. EPS is Rs.10 and hence DPS will also be Rs.10 considering 100% payout ratio. $P_0 = \left(\dfrac{D}{K_e}\right) = \dfrac{10}{15\%} = \text{Rs. }66.67$
17.	PVGO = CMP – Fair price with no growth = 100 – 80 = Rs.20 Fair price with no growth would be computed with company having a payout ratio of 100%. This is because payout will be 100% (retention of 0%) and the same would lead to no growth. $\text{Fair price with no growth} = \left(\dfrac{D}{K_e}\right) = \dfrac{8}{10\%} = \text{Rs. }80$
18.	$\text{Theoretical ex} - \text{rights price} = \dfrac{(\text{Existing shares x Existing Price}) + (\text{New shares x Rights Price})}{\text{Existing shares} + \text{New shares}}$ $\text{Theoretical ex} - \text{rights price} = \dfrac{(1,00,000 \text{ x } 100) + (25,000 \text{ x } 60)}{1,00,000 + 25,000} = Rs.\,92$
19.	<table><tr><th>Particulars</th><th>Calculation</th><th>Amount</th></tr><tr><td>Existing PAT (EPS x No of shares)</td><td>10 x 1,00,000</td><td>10,00,000</td></tr><tr><td>Existing MPS (EPS x PE Multiple)</td><td>10 x 20</td><td>200.00</td></tr><tr><td>Buyback price per share</td><td>200 + 50%</td><td>300.00</td></tr><tr><td>Amount of buyback (Price x No of shares)</td><td>300 x 20,000</td><td>60 lacs</td></tr><tr><td>Interest paid on loan</td><td>60 lacs x 10%</td><td>6,00,000</td></tr><tr><td>After-tax cost of interest</td><td>6,00,000 x 70%</td><td>4,20,000</td></tr><tr><td>New PAT post buyback</td><td>10,00,000 – 4,20,000</td><td>5,80,000</td></tr><tr><td>No of shares post buyback</td><td>1,00,000 – 20,000</td><td>80,000</td></tr><tr><td>Post-buyback EPS</td><td>5,80,000/80,000</td><td>7.25</td></tr></table>
20.	Theoretical value of right = Ex-rights price - Rights issue price Theoretical value of right = 50 - 40 = 10
21.	$\text{Theoretical ex} - \text{rights price} = \dfrac{(\text{Existing shares x Existing Price}) + (\text{New shares x Rights Price})}{\text{Existing shares} + \text{New shares}}$

	Theoretical ex $-$ rights price $= \dfrac{(10 \text{ lacs x } 130) + (5 \text{ lacs x } 40)}{10 \text{ lacs} + 5 \text{ lacs}} = Rs.\,100$ **Note:** New shares issued $= 10,00,000 \times \dfrac{1}{2} = 5,00,000$ Issue price $= \dfrac{200 \text{ lacs}}{5 \text{ lacs}} = Rs.\,40$
22.	Theoretical ex $-$ rights price $= \dfrac{(4 \text{ shares x } 100) + (1 \text{ share x } 80)}{4 + 1} = Rs.\,96$ Share price will fall by Rs.4 due to rights issue and hence the investor will have loss of Rs.4,000 (1,000 shares x 4) as he has neither subscribed nor sold rights

23.	Particulars	Calculation	Amount
	Existing PAT (EPS x No of shares)	3 x 10,000	30,000
	Buyback size	Given	50,000
	Buyback price		100
	No of shares bought back	50,000/100	500
	No of shares post buy-back	10,000 – 500	9,500
	Post-buyback EPS	30,000/9,500	3.16

24.	Particulars	Calculation	Amount
	Earnings from project	200 lacs x 8%	16 lacs
	Value of project (Earnings x PE Multiple)	16 lacs x 12	192 lacs
	Cost of project		200 lacs
	NPV of project	192 lacs – 200 lacs	-8 lacs

25.	Particulars	Calculation	Amount
	Buyback price (EPS x Target PE Multiple)	10 x 20	200
	Buyback size (Surplus cash x specified %)	10,00,000 x 30%	3,00,000
	No of shares bought back	3,00,000/200	1,500 shares

26.	Existing, Lower
27.	$K_e = \left(\dfrac{D_1}{P_0}\right) + G = \dfrac{1.05}{10} + 0.05 = 0.155$ or 15.50% **Note:** Next-year dividend = 1 + 5% = Rs.1.05 Price in the above formula is ex-dividend price and the same would be Rs.10 (11 – 1)
28.	Let us assume existing shares to be 10 shares and let us assume the rights issue shares to be A $80 = \dfrac{(10 \times 100) + (A \times 40)}{10 + A}$; $800 + 80A = 1,000 + 40A$; $A = 5$ Hence 5 new shares will be issued for 10 shares and we can say that one right share issued for every two shares held.
29.	$P_1 = P_0 \times (1 + K_e) - D_1 = 100 \times (1 + 15\%) - 25 = Rs.\,90$
30.	Growth will have a linear fall and stabilize at 14 percent. It has not been mentioned that fall is for how many years and hence it will be taken as 1 percent fall every year. Growth rate of year 5 is 19 percent and growth rate of year 6 is 18 percent
31.	Annual fall in growth rate $= \dfrac{20 - 14}{3} = 2\%$ Hence Growth rate of year 5 is 18% (20% – 2%) and growth rate of year 6 is 16% (18% – 2%)
32.	Dividend of 1996 = PV = 2.115; Dividend of 2002 = FV = Rs.3; Present value = Future value x Present Value Factor $2.115 = 3 \times$ Present Value Factor; Present value factor $= \dfrac{2.115}{3} = 0.705$ **PVF of 0.705 correspond to 6 years and 6 percent. Hence growth rate of the company is 6 percent**

33.	Particulars	Amount
	DPS of year 1 (10 + 10%)	11.00
	DPS of year 2 (11 + 10%)	12.10
	DPS of year 3 (12.10 + 10%)	13.31
	DPS of year 4 (13.31 + 10%)	14.64
	DPS of year 5 (14.64 + 10%)	16.10
	DPS of year 6 (16.10 + 4%)	16.74

	Cost of equity of year 6 Rf + Beta x (Rm – Rf) 17.00%
	$P_5 = \dfrac{D_6}{K_e - G} = \dfrac{16.74}{17\% - 4\%} = Rs.128.77$
34.	$\text{Capital gearing} = \dfrac{\text{Debt + Preference}}{\text{ESC + Reserves}} = \dfrac{100 + 200}{50 + 100} = 2 \text{ Times}$ Gearing of company is 1.25 times higher than that of industry. The company is riskier than industry and hence will need higher return. Higher gearing of 1.25 times will be compensated by higher return of 2.50 % (1.25 x 2) and hence the required return of company A is 12.50%
35.	The investor will get 1.2 shares for every 1 share due to bonus issue. Sale value of 1.2 shares = 900 x 1.20 = 1080 and net realization = 1080 - 5% expenses = 1080 - 54 = Rs.1026
36.	PV of cash inflows = 525. Hence the maximum outflow has to be Rs.525. The investor has to pay 5 percent brokerage and hence the maximum purchase price = 525/105% = Rs.500

37.	Particulars	Amount
	Net Capex (30 – 20)	10.00
	WC increase per share	2.00
	Net capex and WC requirement	12.00
	Funded with debt (12.00 x 60%)	7.20
	Funded with equity (12.00 x 40%)	4.80
	FCFE (EPS – Equity needed for capex and WC)	**5.20**

38.	Particulars	Amount
	Current cost of equity (10 + 1.5 x 20)	40.00%
	Revised cost of equity (10 + 1.75 x 20)	45.00%
	Increase in cost of equity due to higher beta	**5.00%**

39.	Inflation rate = 6%. Real rate of return on risky asset is 10%. This would mean the return of A Limited is 16% (Inflation + Real rate). Risk Premium of A Limited is 4%. Hence risk-free rate of return = 16% - risk premium of 4% = 12%

40.	Particulars	Amount
	Dividend of current year	10.00
	EPS of current year (10/25%)	40.00
	Earnings of year 5 (40×1.2^5)	99.53
	Current payout ratio	25.00%
	Likely payout ratio of year 7	60.00%
	Increase in payout ratio for 7 years	35.00%
	Annual increase in payout ratio (35.00%/7)	5.00%
	Payout ratio of year 5 (25% + (5% x 5 years)	50.00%
	Dividend of year 5 (99.53 x 50%)	**Rs.49.77**

41.	$P_0 = \dfrac{D_1}{K_e - G}; 200 = \dfrac{10 \times (1 + G)}{0.20 - G}; 40 - 200G = 10 + 10G; 30 = 210G; \mathbf{G} = \dfrac{\mathbf{30}}{\mathbf{210}} = \mathbf{14.29\%}$ **Note:** DPS = Rs.10; Payout ratio is 50% and hence EPS is Rs.20 (10/50%). PE Multiple is 10 times and hence the current market price is Rs.200 (20 x 10)

42.	Particulars	Calculation	Amount
	Ex-Dividend price per share	400 – 20	380.00
	Value of 5 shares	380 x 5	1,900.00
	Issue price per GDR (in INR)	1,900 – 20%	1,520
	Net realization post FC (in INR)	1,520 – 5%	1,444
	Net realization in USD	**1,444/100**	**14.44**

43.	$\text{Gross Amount} = \dfrac{\text{Net Amount}}{1 - \text{Issue expenses\%}} = \dfrac{10,00,000}{1 - 0.05} = Rs.10,52,632$

44.	Particulars	Calculation	Amount
	EPS of year 1	10 + 10%	11.00
	EPS of year 2	11 + 9%	11.99
	EPS of year 3	11.99 + 8%	12.95
	EPS of year 4	12.95 + 7%	13.86

	EPS of year 5	13.86 + 6%	14.69
	MPS of year 5	**14.69 x 20**	**293.80**

45.	Current ROCE $= \dfrac{\text{EBIT}}{\text{Capital Employed}} = \dfrac{200}{2,000} = 10\%$ Revised ROCE = 10% + 2% = 12% and the revised capital employed is 2,000 + 400 = 2,400 lacs New EBIT = 2,400 lacs x 12% = Rs.288 lacs

46.	Particulars	Calculation	Amount
	Next year industry sales	2,000 + 10%	2,200
	Next year ABC sales	2,200 x 30%	660
	Less: COGS	660 x 60%	-396
	Gross Profit	660 x 40%	264
	Less: Other expenses	396/2	-198
	PAT of next year		**66**

47.	Current price of share = PV of future cash flows. Let us assume last year dividend as A

	Year	Cash flow	PVF @ 20%	DCF
	1	1.20A [A + 20%]	0.833	A
	2	1.44A	0.94	A
	3	1.728A	0.579	A
	4	2.074	0.482	A
	4	100	0.482	48.20
	Total			4A + 48.20 = 68.20
	Dividend per share (A)			**Rs.5.00**

48.	Conversion value = CMP of equity shares x NO of shares post conversion = 15 x 5 = Rs.75
49.	Conversion premium = CMP - Conversion value; 100 - 75 = Rs.25 per bond (or) Rs.5 per share
50.	Conversion parity price $= \dfrac{\text{CMP of bond}}{\text{Conversion ratio}} = 100/5 = \text{Rs. }20$
51.	Straight value is present value of bond's cash flows discounted at required rate of return. Required rate of return in this case will be 9.5% as that is the return on similar bonds **Straight value of bond = (8 x 0.913) + (8 x 0.834) + (8 x 0.762) + (108 x 0.696) = 95.26**
52.	Downside risk = Current Market price - Straight value Downside risk = 100 - 94.22 = 5.78 **Note:** Straight value = (8 x 3.840) + (100 x 0.635) = Rs.94.22

53.	Particulars	Calculation	Amount
	Interest income of bond	100 x 10%	10.00
	Dividend income per 10 shares	0.20 x 10	2.00
	Favorable income differential per bond	10 – 2	8.00
	Favorable income differential per share	8/10	0.80

54.	Particulars	Existing	Revised
	PAT	2,00,000	2,70,000
	Less: Preference dividend	0	70,000
	EAES	2,00,000	2,00,000
	No of equity shares	1,00,000	1,00,000
	EPS	2.00	2.00

	Earnings need to increase by Rs.70,000 to meet preference dividend. Hence there should be 35 percent increase in overall earnings.

55.	Particulars	Calculation	Amount
	Conversion premium per bond		Rs.100
	Favorable income differential per share		Rs.10
	Favorable income differential per bond	10 x 4	Rs.40
	Premium payback period	100/40	2.50 years

56.	Particulars	Calculation	Amount
	Conversion value at end of year 4	$10 \times (80 \times 1.1^5)$	1,288.41
	Redeemable value		1,000
	Terminal value (Higher of two)		1,288.41

57.	Value if conversion is done = 125 x 10 = Rs.1,250 whereas the CMP of bond = Rs.1,200. We should therefore go ahead with conversion as the value of bond is higher post conversion

58.				

Year	Cash flow	PVF @ 14%	DCF
1	10	0.877	8.77
2	130	0.769	99.97
Value of Bond			**108.74**

59.	$$\text{Gross Amount} = \frac{\text{Net Amount}}{1 - \text{Expenses}} = \frac{7.38}{1 - 0.10} = 8.20 \text{ Crores}$$

60.	Spread of bond = YTM of convertible bond - YTM of comparable bond Spread of bond = 10.76% - 9% = +1.76%

61.	Variable bond is one where prevailing interest rate and interest rate paid on bond will be same. Hence this bond will always be meeting expectation of bond holders. Hence it will always quote at par value which in this case is Rs.1,000

62.					

Year	Cash flow	Reinvestment period	FVF	FCF
1	85	2	1.21	102.85
2	85	1	1.1	93.50
3	1,085	0	1.00	1,085
Total	**1,255**			**1,281.35**

Reinvested interest = 1,281.35 – 1,255 = Rs.26.35

63.	Yield is expected to increase and hence value of portfolio will decline. We should work on reducing the duration of the portfolio as lower duration will lead to lower volatility. Hence in this case we should increase investment in lower duration bonds and sell higher duration bonds

64.	Bond is convertible into 20 shares. Conversion parity price = 140/20 = Rs.7. Investor should opt for conversion if the current market price is Rs.8 (more than Rs.7)

65.	$$\text{Value of share} = \frac{\text{Dividend}}{\text{Current yield}} = \frac{11}{13\%} = 84.62$$

66.	Let us assume new debt to be X. Debt post raising 8 + X Current mortgaged assets = 30 Crores; Mortgaged assets post raising = 30 + 0.5X $$\frac{(30 + 0.5X)}{8 + X} = 2; \text{ We will get X} = 9.33 \text{ crores}$$

67.	Interest rates in the economy is of 12 percent. The company has issued 10 percent bond. The **company will continue with 10 percent bond for another five years** as they can pay interest of 10 percent as compared to prevailing rates of 12 percent

68.	It is a half-yearly bond and hence we should opt for half-yearly discounting. Cash flow will be 5 in period 1, 5 in period 2, 5 in period 3 and 105 in period 4 . Cash flows will be discounted at half-yearly YTM of 6 percent Market price = (5 x 0.943) + (5 x 0.890) + (5 x 0.840) + (105 x 0.792) = Rs.96.53

69.	$$\text{Volatility} = \frac{\text{Duration in years}}{1 + \text{Relevant YTM}} = \frac{5.85}{1 + 5\%} = 5.57$$ Bond is paying half-yearly interest and hence we need to use half-yearly YTM to compute volatility

70.	Yield is expected to increase and hence price will fall; % Fall in price = 4.5 x 0.25 = 1.125%

71.			

Particulars	Calculation	Amount
Total Floatation Cost		30,00,000
Un-amortized Floatation cost	30,00,000 x (25/30)	25,00,000
Tax benefit on write-off	25,00,000 x 30%	7,50,000

Tax benefit will be taken on day 0 as the old bond will be refunded and closed. Hence all tax benefit of Rs.7.5 lacs will arise in year 0

72.	Call premium = 200 lacs x 10%= 20 lacs; Tax benefit = 20 lacs x 20% = Rs.4 lacs; Tax benefit will be taken immediately as the old bond is redeemed

73.	$$\text{Current yield} = \frac{\text{Interest}}{\text{CMP}} = \frac{10}{125} = 8\%$$ Yield will go up by 1 percent and hence it will become 9 percent $$\text{Revised price} = \left(\frac{10}{9\%}\right) = \text{Rs. } 111.11$$

74.	Current market price is equal to face value and hence interest rate and YTM will be same. This would mean that bond will quote at par value of Rs.100 once interest is paid out Price as on October 1, 2019 = Price as on June 30, 2019 + Accrued interest Price as on October 1, 2019 = 100 + (100 x 10% x (3/12) = 100 + 2.50 = 102.50

75.	Particulars	Amount
	Discount rate for A rated bond (9 + 3)	12.00%
	Discount rate for AAA rated bond (12% - 2%)	10.00%
	Discount rate for AA rated bond (10 + 1)	**11.00%**

76.	Duration $= \left(\dfrac{1}{YTM}\right) + 1 = \left(\dfrac{1}{8\%}\right) + 1 = 12.5 + 1 = 13.5$
77.	Annual cash flow $= \dfrac{CMP}{PVAF\ (4\ years,\ 12\%)} = \dfrac{1,000}{3.037} = Rs.\,329.27$
78.	Forward rate of Year 1 $= \left[\dfrac{FVF\ of\ year\ 2}{FVF\ of\ year\ 1}\right] - 1 = \left(\dfrac{1.2544}{1.10}\right) - 1 = 14.04\%$
79.	95,000 will become 1,00,000 in 111 days (30 + 31+ 30 + 20) Yield $= \left(\dfrac{5,000}{95,000}\right) \times \left(\dfrac{365}{111}\right) \times 100 = 17.30\%$

80.	Investment in Bond A = X; Investment in Bond B = 1 - x			
	Bond	Duration	Weight	Product
	A	4	X	4X
	B	10	1-X	10-10X
	Total			4X + 10 – 10X = 6

Solving we get X as 66.67% and hence 66.67% is investment in Bond A and Balance 33.33% is investment in Bond B

81.	Bond will quote at discount as the company is not able to meet investor expectations of 12 percent
82.	**Negative Alpha and sell security** Security is going to earn a return lower than required return and hence it has negative Alpha. We should sell Negative Alpha Securities as they are overvalued.
83.	Current yield $= \dfrac{14}{90} = 15.56\%$

84.	Particulars	Amount
	CMP (Day 0)	1,000.00
	Add: Required return of year 1 (1,000 x 15%)	150.00
	Less: Interest paid in year 1 (1,000 x 12%)	-120.00
	Fair price at end of year 1	**1,030**
	Add: Required return of year 2 (1,030 x 15%)	154.50
	Less: Interest paid in year 2 (1,000 x 12%)	-120.00
	Fair price at end of year 2	**1,064.50**

85.	PVF of year 1 $= \dfrac{1}{1.10} = 0.909$ PVF of year 2 $= \dfrac{PVF\ of\ year\ 1}{1 + DR\ of\ year\ 2} = \dfrac{0.909}{1.12} = 0.812$ PVF of year 3 $= \dfrac{PVF\ of\ year\ 2}{1 + DR\ of\ year\ 2} = \dfrac{0.812}{1.14} = 0.712$
86.	Normally the discount rate would be rate on similar debentures. However, company wants to give return of 18% and hence the same will be taken as discount rate

87.	Particulars	Amount
	Post-tax interest outflow (10 x 70%)	7.00
	Capital gain in year 5 (120 – 80)	40.00
	Tax on capital gain (40.00 x 20%)	8.00
	Net realization post capital gain (120 – 8)	112.00
	Overall realization (Interest (7) + RV(112))	119.00

88.	Particulars	Existing	Revised
	EBIT	400.00	480.00
	Interest	100.00	140.00
	Interest coverage	**4.00**	**3.43**

Note:

	• Let us assume existing interest to be Rs.100 and EBIT will therefore be Rs.400
89.	Risk premium will be greater than market as the security carries more risk than market. This is reflected in security Beta of 2 times as compared to market Beta of 1 time
90.	EV/EBITDA multiple of Infosys = 1000 crores/250 crores = 4 Times; EV of TCS = EBITDA x 4 times = 50 Cr x 4 = 200 Crores
91.	Total enterprise value - value of non-core assets - investment in associates
92.	Value of share $= \dfrac{3.75}{8.5\%} =$ Rs. 44.12
93.	EV = Market value of equity + Debt - Cash and cash equivalents EV = 2000 + 800 - 400 = 2,400
94.	We have data to calculate Enterprise value on the basis of sales and EBITDA. Final enterprise value will be average based on sales and EBITDA EV based on sales = 5,000 x 1.5 = 7,500 EV based on EBITDA = 2,000 x 5 = 10,000 Average Enterprise value $= \dfrac{7,500 + 10,000}{2} = 8,750$
95.	Less than 20% Re-investment has been done at lower than YTM and hence realized YTM would be lower than normal YTM
96.	$PBT = \dfrac{PAT}{1 - \text{Tax rate}} = \dfrac{280}{70\%} = 400$ crores EBITDA = 400 Crores of PBT + 100 Crores of Depreciation + 500 crores of interest = 1,000 crores EV = 1,000 x 5 = 5,000
97.	(i), (ii) is correct **Explanation:** Shorter-maturity bonds have lower life and accordingly lower duration. Higher coupon will lead to higher cash flow during initial years and hence will have lower duration. High discount rate will lead to lower duration and low discount rate will lead to higher duration
98.	Accrued interest = Face value of Rs.100 x 12% x (240/360) = Rs.8.00 Dirty price = Clean price of Rs.95 + Accrued interest of Rs.8 = Rs.103.00
99.	Downward Sloping
100.	Cost of investment $= \dfrac{40,000}{40,00,000} = 1\%$ Return of 2 percent per quarter and hence it will take 1.5 months to earn 1 percent return. Break-even period is 1.5 months
101.	Dirty price = 98 + 4 = 102 Value of security $= \left(\dfrac{4 \text{ crores}}{100}\right)$ x 102 $= 4.08$ crores **Initial proceeds = 4.08 crores - 5% margin = Rs.3.876 Crores**
102.	<table><tr><th>Particulars</th><th>Amount</th></tr><tr><td>Interest cost (2.50 x 4)</td><td>10.00</td></tr><tr><td>Stamp duty (0.5 x 2)</td><td>1.00</td></tr><tr><td>Rating charges</td><td>1.00</td></tr><tr><td>Other cost (0.1 x 12)</td><td>1.20</td></tr><tr><td>Overall cost</td><td>13.20</td></tr></table>
103.	Favourable impact on re-investment (higher interest rate will lead to higher re-investment rate) and adverse impact on price (increase in interest rate will lead to decrease in price)
104.	Let us assume Issue price to be Y $12 = \dfrac{100 - Y}{Y} \times \left(\dfrac{365}{91}\right) \times 100$ $1092Y = 36,50,000 - 36500Y$ $Y = \dfrac{36,50,000}{37,592} =$ Rs. 97.10
105.	Answer to this is bought as an undervalued stock. The PE ratio is considerably lower than that for the median of the peer group, which implies that it may well be undervalued
106.	Amount realized on issue of CP = 100 -4 = 96 lacs; Net amount available = 96 lacs - 5 lacs = 91 lacs Cost of CP $= \left(\dfrac{4 \text{ lacs}}{91 \text{ lacs}}\right)$ x $\left(\dfrac{6}{12}\right)$ x 100 $= 8.79$ percent

107.	Interest on repo $= 7,95,20,000 \times 5\% \times \dfrac{14}{365} = 1,52,504$ Amount to be repaid $= 7,95,20,000 + 1,52,504 = 7,96,72,504$
108.	Valuation aims to estimate the fair value of an asset based on its characteristics and market conditions.
109.	Fall in bond price as compared to today price. Bond is quoting at premium today. This would mean that coupon paid on bond is more than investor expectation. In this case the bond price will consistently fall and reach par value by year 10.
110.	Total return combines the capital appreciation or depreciation of an investment with the income generated over a specific period
111.	The company's beta, risk-free rate, and equity risk premium.
112.	Conducting independent research on the asset being valued
113.	Cash return on total investment can be computed as inverse of EV to EBITDA multiple and the same in this case would be 20% (1/5)
114.	Market interest rate **Explanation:** The value of debentures/bonds is primarily influenced by the market interest rate. When the market interest rate rises above the coupon rate of the debentures/bonds, their value decreases as the fixed coupon payments become less attractive compared to alternative investments. Conversely, when the market interest rate falls below the coupon rate, the value of the debentures/bonds increases
115.	Dividend yield of the preference shares **Explanation:** The primary factor in determining the value of preference shares is the dividend yield. Preference shares provide fixed dividends, typically expressed as a percentage of their face value. The higher the dividend yield, the more valuable the preference shares are to investors seeking stable income. Other factors such as conversion features and credit ratings may also impact the value but are secondary to the dividend yield.
116.	EV to sales
117.	Avoiding conflicts of interest with the client
118.	Value of company as per ROE $= \dfrac{10,00,000}{15\%} =$ Rs. 66,66,667
119.	Free cash flow to firm = Operating cash flow – Capital expenditure Free cash flow to firm = 20,00,000 – 5,00,000 = Rs.15,00,000
120.	Cash flow models are considered superior to dividend models. This is because a company may have surplus cash but the same has not been paid out as dividend and hence dividend discount model will not factor the same. On the other side, cash flow based model values the company on the basis of free cash flow available (whether distributed or not)
121.	Capital expenditure
122.	Deduct the value of cash and cash equivalents from the enterprise value. Cash and cash equivalents readily available to pay off debt or distribute to equity holders. Therefore, when calculating the enterprise value, the value of cash and cash equivalents should be deducted
123.	Value of warrant = (CMP – EP) x Ratio = (80 – 50) x 10 = Rs.300
124.	Repo rate and Reverse Repo Rate
125.	Yield is going to be more than 15% as the discounted charges are collected immediately. **Calculation:** Discounting charges = 100 x 15% x (2/12) = Rs.2.50. Hence bank will be paying Rs.97.50 to seller today and would collect Rs.100 from the buyer. Yield $= \dfrac{100 - 97.50}{97.50} \times \dfrac{12}{2} \times 100 = 15.39\%$
126.	Value of share is lower than exercise price of Rs.50. In this case warrant will not be utilized and hence the value of warrant is 0 **Note:** Warrant cannot have negative value as we will not use the same in case current market price of share is less than exercise price.
127.	Discounted Cash Flow (DCF) Analysis DCF method takes into account the projected future cash flows of the target company and discounts them to their present value using an appropriate discount rate. **DCF analysis considers**

	the cash flows available to both debt and equity holders and provides a comprehensive valuation of the company, including its debt obligations.
128.	Fair value of bond $= \dfrac{1,000}{(1+8\%)^5} =$ Rs. 680.58
129.	Immunization involves matching the duration of a bond portfolio with the investment time horizon.
130.	$$P_0 = \frac{D_0(1+g_n)}{r-g_n} + \frac{D_0 H_1(g_c - g_n)}{r-g_n}$$ $$P_0 = \frac{25(1+0.05)}{0.08-0.05} + \frac{25 \times 2.5\,(0.12-0.05)}{0.08-0.05} = 875 + 145.83 = \text{Rs. }1,020.83$$
131.	Longer-term bonds have higher durations than shorter-term bonds.
132.	Flat Yield Curve **Explanation:** A flat yield curve, where long-term and short-term interest rates are relatively similar, is often associated with a period of economic stability and balanced growth. **It suggests that the market does not anticipate significant changes in interest rates in the near future**. This can indicate a well-functioning economy without strong inflationary pressures or recessionary risks.
133.	Preferred Habitat Theory
134.	Upward Sloping People prefer liquidity and if they are forced to sacrifice the same for a longer period, they need a higher compensation for the same. Hence, as per this theory, the normal shape of a yield curve is Positive sloped one
135.	Coupon Rate
136.	Linear
137.	Nominal cost of equity because the cash flows available to equity shareholders will be nominal cash flows. The reason is that the tax applying to corporate earnings is generally stated in nominal terms
138.	**Answer is Option B** The required interest rate on a security is made up of the nominal rate which is in turn made up of real risk-free interest rate plus the expected inflation rate. It should also contain a liquidity premium as well as a premium related to the maturity of the security.
139.	Bond refunding increases the company's cash outflows in the short term. Bond refunding typically involves the payment of call premiums, transaction costs, and possibly retiring the existing bond before issuing a new one. These activities result in increased cash outflows for the company in the short term
140.	Convexity $= \dfrac{V_+ + V_- - 2V_0}{2V_0(\Delta y^2)} = \dfrac{96.30 + 103.89 - 2(100)}{2(100)(0.01)(0.01)} = 9.50$
141.	Bond refunding reduces the company's future interest payments
142.	In the short run and under conditions of low inflation
143.	Treasury Bills
144.	Commercial Paper
145.	Increase **Explanation:** Cost of equity is higher than ROE. This is a case of declining firm and it should have 100% payout ratio. Hence any increase in payout ratio will lead to improvement in price
146.	$FRA_{5x6} = \dfrac{\text{FVF for six years}}{\text{FVF for five years}} - 1 = \dfrac{(1+0.07)^6}{(1+0.06)^5} - 1 = 12.14\%$
147.	(see table below)

Security	Duration	Weight	Product
AAA Bond	8	1,050	8,400
AA Bond	6	1,000	6,000
A Bond	4	950	3,800
Total	**6.07**	**3,000**	**18,200**

Chapter 6 – Portfolio Management

1. Demand for which real estate type is most affected by foreign trade
   a. Retail
   b. Office
   c. Industrial

2. Stock market is expected to be in bullish phase. You have shortlisted 5 securities from the market and want to invest in 3 with a minimum of 20% in each of the securities to diversify the risk. Identify the securities and proportion of investment.

Company	Beta
S Limited	1.60
K Limited	1.00
P Limited	-0.30
D Limited	2.00
C Limited	0.60

   a. S Limited (60%), D Limited (20%) and K Limited (20%)
   b. D Limited (60%), S Limited (20%) and K Limited (20%)
   c. D Limited (33.33%), S Limited (33.33%) and K Limited (33.33%)
   d. D Limited (50%), S Limited (25%) and K Limited (25%)

3. An investor in a hotel property is evaluating the acquisition of an old hotel building. He is interested in this property as the land prices in the locality have held up pretty well during the last downturn. He contacts the builder for a new hotel in the area and obtains the estimate per square foot if the property is newly constructed. In valuing the subject property, he is most likely using the:
   a. Sales comparison approach
   b. Cost approach
   c. Income approach
   d. Discounted after tax cash flow approach

4. Assume that a property has a gross annual income equal to Rs.150,000, and that comparable properties have a gross income multiplier equal to 11.25. The gross income multiplier approach provides a market value for this property that is closest to:
   a. 16,25,000
   b. 13,33,333
   c. 16,87,500
   d. 20,00,000

5. Which of the following statements about the steps in the portfolio management process is NOT correct?
   a. Rebalancing the investor's portfolio is done on an as-needed basis, and should be reviewed on a regular schedule.
   b. Implementing the plan is based on an analysis of the current and future forecast of financial and economic conditions.
   c. Developing an investment strategy is based on an analysis of historical performance in financial markets and economic conditions.

6. An investor has decided to follow 'Buy and Hold' strategy. He wants to create a portfolio of Rs.10,00,000. He does not want the portfolio to go below Rs.4,00,000. How much should the investment be in Bond and equity?
   a. 5,00,000 and 5,00,000
   b. 6,00,000 and 4,00,000
   c. 4,00,000 and 6,00,000
   d. 10,00,000 and 0

7. Affluence Inc. is considering whether to expand its recreational sports division by embarking on a new project. Affluence's capital structure consists of 75% debt and 25% equity and its marginal tax rate is 30%. Aspire Brands is a publicly traded firm that specializes in recreational sports products. Aspire has a debt-to-equity ratio of 1.7, a beta of 0.8, and a marginal tax rate of 35%. Using the pure-play method with Aspire as the comparable firm, the project beta Affluence should use to calculate the cost of equity capital for this project is closest to:
   a. 0.58
   b. 1.18
   c. 0.38
   d. 1.12

8. If the costs of debt financing are greater than the return on a real estate investment, then it is most likely that the:
   a. discount rate is less than the cap rate.
   b. value of the property is lower.
   c. use of leverage decreases equity returns
   d. Discount rate is incorrect

9. Assume you are attempting to estimate the equilibrium expected return for a portfolio using a two-factor arbitrage pricing theory (APT) model. One factor is changes in the 30-year T-bond rate and the other factor is the percentage growth in gross national product (GNP). Assume that you have estimated the risk premium for the interest rate factor to be 0.02, and the risk premium on the GNP factor to be 0.03. The sensitivity of the portfolio to the interest rate factor is -1.2 and the portfolios sensitivity to the GNP factor is 0.80. Given a risk free rate equal to 0.03, what is the expected return for the asset?
   a. 5.0%.
   b. 7.0%
   c. 2.4%.
   d. 3.0%.

10. An analyst has used Security Market Line to determine if the securities are undervalued/over-valued. He has determined the following forecast about ABC Limited

Forecast returns of ABC Limited	10.00%
Standard deviation of ABC Limited	15.00%
Expected return of stock market index	12.00%
Standard deviation of stock market index	20.00%
Correlation between ABC Limited and stock market index	0.60
Risk-free rate	6.00%

To determine the fair value of ABC, analyst should use the following risk value and should make the following valuation decision
   a. 0.45 and undervalued
   b. 0.15 and overvalued
   c. 0.45 and overvalued
   d. 0.15 and undervalued

11. Compute the Standard Deviation of Security from following information

Year	Return
1	10
2	20
3	-10
4	-20

   a. 20%
   b. 10%

c.   15.81%

d.   18.25%

12. Compute the Standard Deviation of Security from the following information

Probability	Return
0.20	10
0.30	20
0.40	-10
0.10	-20

a.   20%

b.   10%

c.   14.70%

d.   16.70%

13. Which of the following statements about systematic and unsystematic risk is most accurate?
   a.   Total risk equals market risk plus firm-specific risk.
   b.   The unsystematic risk for a specific firm is similar to the unsystematic risk for other firms in the same industry.
   c.   As an investor increases the number of stocks in a portfolio, the systematic risk will remain constant.

14. Which of the following statements accurately represents a key difference between Active and Passive Portfolio Strategies?
   a.   Active Portfolio Strategy seeks to minimize portfolio turnover, while Passive Portfolio Strategy encourages frequent trading.
   b.   Active Portfolio Strategy emphasizes lower management fees and operating expenses, while Passive Portfolio Strategy often incurs higher costs.
   c.   Active Portfolio Strategy relies on diversification across various asset classes, while Passive Portfolio Strategy typically focuses on investing in individual stocks.
   d.   Active Portfolio Strategy aims to outperform the market through active management, while Passive Portfolio Strategy aims to match the market returns

15. Which of the following is least likely considered a source of systematic risk for bonds?
   a.   Purchasing power risk.
   b.   Default risk
   c.   Market risk

16. According to the capital asset pricing model (CAPM), if the expected return on an asset is too low given its beta, investors will:
   a.   buy the stock until the price rises to the point where the expected return is again equal to that predicted by the security market line.
   b.   buy the stock until the price falls to the point where the expected return is again equal to that predicted by the security market line.
   c.   sell the stock until the price rises to the point where the expected return is again equal to that predicted by the security market line.
   d.   sell the stock until the price falls to the point where the expected return is again equal to that predicted by the security market line.

17. What is the risk measure associated with the CML?
   a.   Beta
   b.   Standard Deviation
   c.   Market risk
   d.   Portfolio return

18. Kaskin, Inc., stock has a beta of 1.2 and Quinn, Inc., stock has a beta of 0.6. Which of the following statements is most accurate?
    a. The stock of Kaskin, Inc., has more total risk than Quinn, Inc.
    b. The expected rate of return will be higher for the stock of Kaskin, Inc., than that of Quinn, Inc.
    c. The stock of Quinn, Inc., has more systematic risk than that of Kaskin, Inc.

19. Correlation co-efficient of security A and Market = 0.80; SD of Security A = 20%; SD of market = 25%. How much is the Beta of Security A?
    a. 0.80 Times
    b. 0.64 Times
    c. 1 Time
    d. 1.25 Times

20. Which of the following factors are not part of systematic risk?
    a. Interest rate risk
    b. Purchasing Power risk
    c. Market risk
    d. Financial risk

21. Co-variance of Security A and B = 0.0200; SD of Security A = 0.40 and SD of Security B = 0.20. How much is correlation co-efficient between A and B?
    a. +0.10
    b. +0.05
    c. +0.50
    d. +0.25

22. What is the beta of Hamburg Corp.'s stock if the covariance of the stock with the market portfolio is 0.23, and the standard deviation of the market returns is 32%?
    a. 1.65
    b. 0.72
    c. 1.40
    d. 2.25

23. An active manager will most likely short a security with an expected Jensen's alpha that is:
    a. Negative
    b. Positive
    c. Zero

24. SD of Security A = 10%; Weight of Security A in portfolio = 60%; SD of Security B = 20%; Weight of Security B = 40%; Correlation co-efficient between Security A and B is 0.50. How much is the portfolio SD?
    a. 14%
    b. 15%
    c. 12.17%
    d. 14.25%

25. In the Markowitz framework, an investor should most appropriately evaluate a potential investment based on its:
    a. intrinsic value compared to market value
    b. expected return
    c. effect on portfolio risk and return.

26. Security A has Beta of 1.50 Times and required return of 15.00%. Security B has Beta of 0.50 Times and required return of 10.00%. How much is the risk-free rate and market return?
    a. 5% and 10%
    b. 8% and 13%
    c. 7.5% and 12.50%

27. Which of the following is the risk that disappears in the portfolio construction process?
    a. Unsystematic risk
    b. Systematic risk
    c. Interest rate risk
    d. Market risk

28. During inflationary conditions, a security gets exposed to purchasing power risk. Which of the following statements is true about purchasing power risk?
    a. PP risk has higher impact on fixed income securities as compared to flexible income securities
    b. PP risk has equal impact on both fixed income securities and flexible income securities
    c. PP risk has higher impact on flexible income securities as compared to fixed income securities

29. The expected rate of return is 1.5 times the 16% expected rate of return from the market. What is the beta if the risk free rate is 8%?
    a. 3 Times
    b. 4 Times
    c. 2 Times
    d. 1.5 Times

30. _____ measures total risk whereas _____ measures systematic risk
    a. SD and Variance
    b. SD and Beta
    c. Beta and SD
    d. Beta and Variance

31. _____ indicates that the security's return is dependent on the market return but moves in the opposite direction in which the market moves
    a. Positive Beta
    b. Zero Beta
    c. Negative Beta

32. A portfolio has Beta of 1.5 Times. Risk-free rate is 6% and market return is 9%. How much of the portfolio return is attributable to the higher risk assumed by portfolio manager?
    a. 3%
    b. 4.50%
    c. 1.50%
    d. 9.00%

33. Compute Co-variance between Security A and B with the help of following information

Year	Return on A (%)	Return on B (%)
2006	10	12
2007	16	18

    a. 3
    b. 9
    c. 36
    d. 6

34. Given the following risky securities

Particulars	A	B	C	D	E	F	G	H
Return %	10	12.5	15	16	17	18	18	20
Risk %	23	21	25	29	29	32	35	45

Identify the inefficient securities in the given list?
   a. B, C, E and F
   b. A and D
   c. A, D, G and H
   d. A, D and G

35. Consider a stock selling for Rs.23 that is expected to increase in price to Rs.27 by the end of the year and pay a Rs.0.50 dividend. If the risk-free rate is 4%, the expected return on the market is 8.5%, and the stock's beta is 1.9, what is the current valuation of the stock? The stock:
   a. Is undervalued
   b. Is correctly valued
   c. Is overvalued

36. SD of Portfolio A = 2.6250; SD of market is 1.0000. Portfolio A is fully diversified. How much is the Beta of Portfolio A?
   a. 1 Times
   b. 2 Times
   c. 2.6250 Times
   d. 1.62 Times

37. A portfolio manager adds a new stock that has the same standard deviation of returns as the existing portfolio but has a correlation coefficient with the existing portfolio that is less than +1. Adding this stock will have what effect on the standard deviation of the revised portfolio's returns? The standard deviation will:
   a. decrease only if the correlation is negative
   b. decrease
   c. increase
   d. increase only if the correlation is positive

38. Which of the following statements best describes the Active Portfolio Strategy in portfolio management?
   a. The Active Portfolio Strategy aims to replicate the performance of a specific market index or benchmark.
   b. The Active Portfolio Strategy involves frequent buying and selling of securities with the goal of outperforming the market.
   c. The Active Portfolio Strategy primarily focuses on long-term capital appreciation through diversified investments.
   d. The Active Portfolio Strategy relies on low-cost index funds to achieve consistent returns over time.

39. The rate of return of Market is 8% and risk-free rate of return is 5%. You are currently holding Rs.1,00,000. How much should be the investment in market and risk-free asset to get return of 10%?
   a. 1,66,667 and 66,667
   b. 1,66,667 and -66,667
   c. -66,6667 and 1,66,667
   d. 66,667 and 1,66,6667

40. RBI has closed the latest auction for Rs.2,500 crores of 182 days bills for the lowest bid of 4.3% although there were bidders at a higher rate of 4.6% also for lots less than Rs.10 Crores. What should be taken as risk-free rate if you want to follow an aggressive approach?
    a. 4.45%
    b. 4.60%
    c. 4.30%

41. If two stocks have positive covariance, which of the following statements is CORRECT?
    a. The rates of return tend to move in the same direction relative to their individual means.
    b. The two stocks must be in the same industry
    c. If one stock doubles in price, the other will also double in price.

42. What is the expected rate of return for a stock that has a beta of 0.8 if the risk-free rate is 5%, and the market risk premium is 7%?
    a. 6.6%.
    b. 8.0%.
    c. 10.6%.
    d. 12.6%

43. Sensitivity of return of each with respect to market is called as _____
    a. Beta
    b. Standard Deviation
    c. None of the above

44. A security moved up by 12% when the market moved down by 6%. How much is the beta of the security?
    a. 2 times
    b. -2 times
    c. 0.5 times
    d. -0.5 times

45. Beta of Company A = 1.50 Times; Beta of Company B = 2 Times; SD of market = 0.10. How much is covariance between Security A and Security B?
    a. 0.30
    b. 0.03
    c. 0.01

46. Variance of Security 1 = 167.75; Variance of security 2 = 126.98; Covariance between Security A and B is -144.25; How much should be the investment in Security 1 to formulate a minimum risk portfolio?
    a. 0.50
    b. 0.4650
    c. 0.5350
    d. 0.75

47. Stock A has a standard deviation of 0.5 and Stock B has a standard deviation of 0.3. Stock A and Stock B are perfectly positively correlated. According to Markowitz portfolio theory how much should be invested in each stock to minimize the portfolio's standard deviation?
    a. 50% in Stock A and 50% in Stock B
    b. 100% in Stock B
    c. 30% in Stock A and 70% in Stock B
    d. 100% in Stock A

48. A portfolio's excess return per unit of systematic risk is known as its:
    a. Jensen's Alpha
    b. Treynor ratio
    c. Sharpe Ratio

49. Which investment strategy, often utilized to protect the downside risk of a portfolio, involves dynamically adjusting the asset allocation based on a specified formula tied to the portfolio's value?
    a. Buy and Hold Policy
    b. Constant mix policy
    c. Constant Proportion Portfolio Insurance (CPPI) Policy
    d. Dynamic Asset Allocation Strategy

50. Total risk of security (SD) = 0.20. Security has perfect positive correlation with market. How much is the unsystematic risk as per SD approach?
    a. 0.20
    b. 0
    c. 0.10

51. Co-efficient of determination (r) = 0.80; Total variance = 400. How much is the unsystematic risk as per variance approach?
    a. 80
    b. 320
    c. 256
    d. 144

52. Which of the following statements is true regarding the Passive Portfolio Strategy in portfolio management?
    a. The Passive Portfolio Strategy aims to actively manage the portfolio to beat market benchmarks.
    b. The Passive Portfolio Strategy relies on a buy-and-hold approach without frequent rebalancing.
    c. The Passive Portfolio Strategy involves constant adjustments of asset allocation based on market conditions.
    d. The Passive Portfolio Strategy seeks to generate higher returns through aggressive trading of individual stocks.

53. The beta of stock D is -0.5. If the expected return of Stock D is 8%, and the risk-free rate of return is 5%, what is the expected return of the market?
    a. -1.0%
    b. +3.0%
    c. +3.5%
    d. -2.5%

54. Residual variance is also known as _____
    a. Total Risk
    b. Unsystematic risk
    c. Systematic Risk

55. Which of the following statements regarding efficient/inefficient portfolio is true?
    a. A portfolio is said to be efficient if we cannot increase the expected return without increasing risk
    b. A portfolio is said to be efficient if we can increase the return without increasing the risk
    c. A portfolio is said to be efficient if risk can be reduced without decreasing the return

d.   A portfolio is said to be efficient if we can increase the return while decreasing the risk

56. Unsystematic risk as per variance approach of Security A = 0.02; Unsystematic risk as per variance approach of Security B = 0.05; Weight of security A = 80%; Weight of Security B = 20%. How much is portfolio unsystematic risk?
    a.   0.026
    b.   0.035
    c.   0.0148
    d.   None of the above

57. Which investment policy is best described as a passive strategy where investors buy a diversified portfolio of assets and hold them over an extended period, with minimal trading or adjustments?
    a.   Buy and Hold Policy
    b.   Constant mix policy
    c.   Constant Proportion Portfolio Insurance (CPPI) Policy
    d.   Tactical Asset Allocation Strategy

58. Which of the following investment strategies involves maintaining a predetermined asset allocation mix and periodic rebalancing to original proportions, ensuring disciplined risk management and potential long-term growth?
    a.   Buy and Hold Policy
    b.   Constant mix policy
    c.   Constant Proportion Portfolio Insurance (CPPI) Policy
    d.   Tactical Asset Allocation Strategy

59. Variance of Portfolio is 200.22. SD of market is 15 and Beta of Portfolio is 0.8467. How much is the unsystematic risk of portfolio as per variance approach?
    a.   200.22
    b.   161.29
    c.   1.45
    d.   38.93

60. Which of the following statements accurately reflects the relationship between inflation and Bond Security selection?
    a.   Rising inflation generally increases the demand for long-term bonds with fixed interest rates.
    b.   Inflation has no direct impact on bond prices, making it an insignificant factor for investors.
    c.   High inflation rates lead to lower interest rates, making short-term bonds more attractive.
    d.   Inflation erodes the purchasing power of bond yields, making bonds less desirable during inflationary periods.

61. Which of these strategies provides protection during down markets?
    a.   Buy and Hold Policy
    b.   Constant Mix Policy
    c.   Constant Proportion Portfolio Insurance

62. Efficient frontier contains all possible efficient portfolios and any point on the frontier dominates any point to the _____
    a.   Right of it and below it
    b.   Right of it and above it
    c.   Left of it and above it
    d.   Left of it and below it

63. Random error is also known as _____

    a. Total risk
    b. Systematic Risk
    c. Unsystematic Risk

64. Risk-free rate = 4%; Risk premium of market = 8%. What is the expected return of a security having Beta of 2 Times?
    a. 16.00%
    b. 24.00%
    c. 12.00%
    d. 20.00%

65. Portfolio risk is the weighted average of risks of the securities forming part of portfolio in case of
    a. Perfectly negative correlation between securities
    b. No correlation between securities
    c. Perfectly positive correlation between securities
    d. Positive correlation between securities

66. Mr. Tamarind intends to invest in equity shares of a company the value of which depends upon various parameters as mentioned below:

Factor	Beta	Expected Value %	Actual Value %
GNP	1.20	7.70	7.70
Inflation	1.75	5.50	7.00

If the risk free rate of interest be 9.25%, how much is the return of the share under Arbitrage Pricing Theory?
    a. 9.25%
    b. 11.88%
    c. 6.63%
    d. 17.40%

67. SD of Security A = 12%; Beta of Security A = 1.5 Times; SD of market = 6%; Risk-free rate = 6%. Return of Market = 10%. How much is the required return as per Security Market Line and Capital Market Line?
    a. 14% and 12%
    b. 12% and 14%
    c. 10% and 14%
    d. 14% and 10%

68. The correlation of returns on the risk-free asset with returns on a portfolio of risky assets is:
    a. Positive
    b. Zero
    c. Negative

69. A firm has an equity beta of 1.30 and is currently financed by 25% debt and 75% equity. What will be the beta of company's assets? Assume corporation tax to stand at 35%.
    a. 0.975 Times
    b. 1.0685 Times
    c. 0.9125 Times
    d. 1.30 Times

70. Return of risky portfolio = 20%. You have invested with a margin of 50% and cost of borrowing is 10%. How much is the return of investor?
    a. 20%
    b. 10%
    c. 30%
    d. 25%

71. An investor is forming a portfolio of two securities. The correlation between two securities is -1. What will be the impact on portfolio risk as correlation coefficient gradually changes from -1 to 1?
    a. Portfolio risk has no impact
    b. Portfolio risk will decrease
    c. Portfolio risk will increase

72. Correlation co-efficient between Security X and Security X is _____
    a. No correlation
    b. Correlation of +1
    c. Correlation of -1

73. You have created a portfolio of Rs.2,00,000 with equal investment in debt and equity. Equity market has declined from 100 to 80 and revived from 80 to 125. How much is the maturity value under buy and hold policy?
    a. 2,00,000
    b. 1,80,000
    c. 2,25,000
    d. 2,30,625

74. You have created a portfolio of Rs.2,00,000 with equal investment in debt and equity. Equity market has declined from 100 to 80 and revived from 80 to 125. How much is the maturity value under constant mix policy?
    a. 2,00,000
    b. 1,80,000
    c. 2,25,000
    d. 2,30,625

75. Equity of A Limited = Rs.2 crores and Debt of A Limited is Rs.2 Crores. Beta of equity shares of A Limited is 2 Times. How much is the Beta of the existing assets of A Limited?
    a. 2 Times
    b. 4 Times
    c. 1 Time

76. Levered Beta is _____ and unlevered beta is _____
    a. Equity Beta and Asset Beta
    b. Asset Beta and equity Beta
    c. Debt beta and equity beta
    d. Equity beta and debt beta

77. SD of risky portfolio = 20%. You have invested with a margin of 50% and cost of borrowing is 10%. Risk-free rate is 10%. How much is the risk of investor?
    a. 30%
    b. 20%
    c. 10%
    d. 25%

78. Expected Maximum decline in stock market = 10%; Value of portfolio = 10,00,000. How much can be the investment in equity with a multiplier of '2' as per constant proportion portfolio insurance policy?
    a. 1,00,000
    b. 2,00,000
    c. 9,00,000
    d. 8,00,000

79. Two companies are identical in all aspects except capital structure. ABC Limited has a debt-equity ratio of 1:4 and its equity has beta of 1.1. XYZ Limited has a debt-equity ratio of 3:4. Income tax is 30%. Estimate equity beta of XYZ Limited?
    a. 0.9362 Times
    b. 1.4277 Times
    c. 1.10 Times
    d. 3.30 Times

80. Return of Security A = 12%; Beta of Security A = 2 Times; Return of market = 8%; Risk-free rate = 6%. What is the characteristic line of Security A?
    a. +4% + (2 x Return of market)
    b. -4% + (2 x Return of Market)
    c. +2% + (1 x Return of Market)
    d. -2% + (1 x Return of Market)

81. Which of the following is NOT an assumption of capital market theory?
    a. Interest rates never change from period to period
    b. Investors can lend at the risk-free rate, but borrow at a higher rate
    c. The capital markets are in equilibrium.

82. Specific SD of a security is also known as _____
    a. Unsystematic Risk
    b. Systematic Risk
    c. Total Risk

83. Which asset allocation strategy emphasizes maintaining a fixed allocation mix across different asset classes for an extended period, regardless of short-term market fluctuations?
    a. Strategic Asset Allocation
    b. Tactical Asset Allocation
    c. Constant Proportion Portfolio Insurance (CPPI) Strategy
    d. Dynamic Asset Allocation

84. Co-variance between security X and Security X = 4.80; Co-variance between Security X and Security Y = 4.30; Co-variance between Security Y and Security Y = 4.25. How much is the Standard deviation of Security X?
    a. 4.80
    b. 4.30
    c. 2.19
    d. 2.07

85. Which alternative investment provides investors with partial ownership of a pool of real estate assets, offering potential income through rental payments and the potential for capital appreciation?
    a. Hedge Funds
    b. Private Equity
    c. Real Estate Investment Trusts (REITs)
    d. Venture Capital

86. A portfolio currently holds TCS and the portfolio manager is thinking of adding either WIPRO or Ashok Leyland to the portfolio. All three stocks offer the same expected return and total risk. The covariance of returns between TCS and WIPRO is +0.5 and the covariance between TCS and Ashok Leyland is -0.5. The portfolio's risk would decrease:
    a. most if she put half your money in WIPRO and half in Ashok Leyland
    b. more if she bought WIPRO

c. more if she bought Ashok Leyland

87. Which of the bond swap strategy involves switch from a lower yield bond to a higher yield bond of almost identical quantity and maturity?
   a. Pure Yield Pickup Swap
   b. Substitution swap
   c. International Spread Swap
   d. Tax Swap

88. Which form of gold investment is issued by the government and allows investors to buy gold in a paper form without the need for physical possession, while also earning fixed interest over time?
   a. Physical Gold
   b. Gold Bars
   c. Sovereign Gold Bonds
   d. E-Gold

89. Which alternative investment involves investing in early-stage companies with high growth potential, often in technology or innovative industries?
   a. Hedge Funds
   b. Private Equity
   c. Real Estate Investment Trusts (REITs)
   d. Venture Capital

90. Which Active Strategy involves investment of equal amount in bonds with different maturity periods?
   a. Bullet Strategy
   b. Barbell Strategy
   c. Ladder Strategy

91. Which of the following best describes the objective of investing in distressed securities?
   a. To invest in high-risk securities that offer potential for significant returns in stable market conditions.
   b. To invest in low-risk securities issued by financially stable companies with high credit ratings.
   c. To take advantage of undervalued securities of companies facing financial difficulties, with the expectation of high returns in case of successful restructuring.
   d. To diversify the investment portfolio with securities from different industries and sectors.

92. Which of these strategies are useful in case of investing in distressed companies?
   a. Long position in debt and long position in equity
   b. Long position in debt and short position in equity
   c. Not taking any position

93. As the correlation between the returns of two assets becomes lower, the risk reduction potential becomes
   a. Decreased by the same level
   b. Greater
   c. Smaller

94. Which of the following asset allocation strategies involves dynamically adjusting the portfolio's asset allocation based on market conditions and economic outlook to capitalize on short-term opportunities?
   a. Strategic Asset Allocation

    b.   Tactical Asset Allocation
    c.   Constant Proportion Portfolio Insurance (CPPI) Strategy
    d.   Dynamic Asset Allocation

95. Reward to variability ratio is basically _____
    a.   Sharpe Ratio
    b.   Treynor Ratio

96. Ashwin, CA, examines data for two computer stocks, AAA and BBB, and derives the following results: Standard deviation for AAA is 0.50. Standard deviation for BBB is 0.50. Standard deviation for the Nifty is 0.20. Correlation between AAA and the Nifty is 0.60. Beta for BBB is 1.00. Ashwin wants you to identify the stock with the highest systematic and unsystematic risk. _____ has the highest systematic risk and _____ has the highest unsystematic risk
    a.   AAA and AAA
    b.   AAA and BBB
    c.   BBB and BBB
    d.   BBB and AAA

97. The security market line (SML) is a graphical representation of the relationship between return and
    a.   total risk
    b.   unsystematic risk
    c.   systematic risk
    d.   Residual risk

98. Examples of macroeconomic variables that create systematic risk include:
    a.   variability in the growth of the money supply.
    b.   changes in GDP growth rates.
    c.   all of these choices are correct.

99. Figment, Inc., stock has a beta of 1.0 and a forecast return of 14%. The expected return on the market portfolio is 14%, and the long-run inflationary expectation is 3%. Which of the following statements is most accurate? Figment, Inc.'s stock:
    a.   valuation relative to the market cannot be determined.
    b.   is overvalued.
    c.   is properly valued

100. ABC Wealth Management is establishing a new portfolio for a client. They aim to understand the client's risk tolerance, investment goals, and time horizon to make informed investment decisions. Which of the following phases of portfolio management is focused on gathering relevant information about the client's investment objectives?
    a.   Portfolio Construction Phase
    b.   Portfolio Analysis Phase
    c.   Portfolio Planning Phase
    d.   Portfolio Monitoring Phase

101. XYZ Investments, a leading financial firm, is implementing a disciplined approach to portfolio management. They want to ensure a thorough analysis of investment opportunities and regular monitoring of the portfolio's performance. Which of the following phases of portfolio management is concerned with the ongoing review and assessment of the portfolio's performance?
    a.   Portfolio Analysis Phase
    b.   Portfolio Construction Phase
    c.   Portfolio Evaluation Phase
    d.   Portfolio Monitoring Phase

102. LMN Capital is managing a portfolio for a client who seeks to minimize the impact of systematic risk on their investments. Which of the following portfolio theories would be most suitable for guiding LMN Capital in managing the client's portfolio to minimize systematic risk?
     a. Capital Asset Pricing Model (CAPM)
     b. Modern Portfolio Theory (MPT)
     c. Arbitrage Pricing Theory (APT)
     d. Black-Scholes Model

103. ABC Investments is analyzing a stock for potential inclusion in their portfolio. They want to assess the risk associated with the stock. Which of the following risks is most likely to be classified as systematic risk for the stock in consideration?
     a. Regulatory risk specific to the industry
     b. Company-specific operational risk
     c. Currency exchange rate risk
     d. Management risk related to the company's leadership

104. An efficient portfolio has the _____ risk among all feasible portfolio having same or high return
     a. Lowest
     b. Highest
     c. Moderate

105. In order to construct a well-diversified portfolio, an investor should eliminate _____
     a. Systematic risk
     b. Unsystematic risk
     c. Total risk

106. LMN Investments is evaluating a stock for potential investment. They want to assess the risk associated with the stock. Which of the following risks is most likely to be classified as unsystematic risk for the stock in consideration?
     a. Market-wide recessionary conditions
     b. Fluctuations in the exchange rate between two currencies
     c. Changes in government regulations impacting the industry
     d. Industry-wide competitive pressures

107. You are required to assess the past performance of sector specific funds. Which of these ratios can be used to better assess the performance?
     a. Sharpe Ratio
     b. Treynor Ratio
     c. Both can be used

108. Required return as per CAPM is 18% whereas the security is likely to give return of 16%. In this case, the security is _____
     a. Undervalued
     b. Overvalued
     c. Correctly valued

109. Compute Beta of Security A with the help of following information:

	Year 2007	Year 2008	Year 2009
Market (%)	12.0	11.0	9.0
Company A (%)	13.0	11.5	9.8

     a. 2 Times
     b. 1.2536 times

c. 0.9250 times

d. 1.0836 Times

110. Risk-free rate of return is 6% whereas market return is 10%. Security X is 40% more riskier than the market. How much is the required return of Security X?

a. 10.00%

b. 14.00%

c. 11.60%

d. 6.00%

111. PQR Investments is constructing a portfolio and wants to select assets that are positively correlated to maximize portfolio returns. Which of the following correlation coefficients indicates the weakest positive linear relationship between the returns of two assets?

a. 0.10

b. 0.40

c. 0.60

d. 0.80

112. Risk for capital market line is measured through _____ and risk for security market line is measured through _____

a. Beta and Standard Deviation

b. Standard Deviation and Beta

113. An investor has found two portfolio which are on minimum risk.

Portfolio	Weight of A	Weight of B	Weight of C
1	0.50	0.25	0.25
2	0.70	0.20	0.10

He has decided to invest 20% of funds in Security A. How much should he invest in B and C to have a minimum risk portfolio?

a. 0.475 and 0.325

b. 0.325 and 0.475

c. 0.40 and 0.40

d. 0.25 and 0.55

114. XYZ Asset Management is constructing a portfolio for a client with a specific target return. They want to determine the optimal asset allocation. According to the Markowitz model, which of the following factors is crucial for determining the optimal asset allocation?

a. Maximizing the expected return of each individual asset

b. Minimizing the standard deviation of each individual asset

c. Assessing the correlation between different assets

d. Considering the market capitalization of each individual asset

115. PQR Investments is constructing a portfolio and wants to allocate assets in a manner that maximizes return for a given level of risk. According to the Markowitz model, which of the following concepts is essential for achieving an optimal risk-return trade-off?

a. Beta coefficient of individual assets

b. Sharpe ratio of individual assets

c. Efficient frontier of asset combinations

d. Treynor ratio of individual assets

116. Holding all else equal, if the beta of a stock increases, the stock's price will:

a. Decrease

b. Increase

c. Be unaffected

     d.   Become zero

117. A 5-year bond with a 10% coupon has a present yield to maturity of 8%. If interest rates remain constant one year from now, the price of the bond will be:
     a.   The same
     b.   Higher
     c.   Lower
     d.   Impact cannot be assessed

Answer:

1.	Industrial
2.	We should invest maximum in securities having higher Beta to maximize returns in bull phase. We are required to invest in three securities with minimum investment of 20%. Hence, we can invest 60% in highest Beta Security, 20% in next security and balance 20% in third security.
3.	Cost approach
4.	Value of property = 1,50,000 x 11.25 = Rs.16,87,500
5.	Developing an investment strategy is based on an analysis of historical performance in financial markets and economic conditions **Explanation:** Developing an investment strategy is based primarily on an analysis of the current and future financial market and economic conditions. Historical analysis serves to help develop an expectation for future conditions
6.	Under this strategy investors set a limit (floor) below which he does not wish the value of portfolio should go. Therefore, he invests an amount equal to floor value in non-fluctuating assets (Bonds). Hence in this case 4,00,000 would be invested in Bonds and balance 6,00,000 will be invested in equity
7.	**Computation of Asset Beta of Proxy Entity:**
<table><tr><th>Source</th><th>Beta</th><th>Weight</th><th>Product</th></tr><tr><td>Debt</td><td>0.00</td><td>1.105 [1.7 x 65%]</td><td>0.00</td></tr><tr><td>Equity</td><td>0.80</td><td>1.00</td><td>0.80</td></tr><tr><td>**Overall**</td><td>**0.38**</td><td>**2.105**</td><td>**0.80**</td></tr></table> **Computation of equity Beta of Affluence:** <table><tr><th>Source</th><th>Beta</th><th>Weight</th><th>Product</th></tr><tr><td>Debt</td><td>0.00</td><td>52.50 [75 x 70%]</td><td>0.00</td></tr><tr><td>Equity</td><td>**1.18**</td><td>25</td><td>29.45</td></tr><tr><td>Overall</td><td>0.38</td><td>77.50</td><td>29.45</td></tr></table> Equity Beta of Affluence = 1.18 Times
8.	Use of leverage reduces equity returns as usage of debt is not beneficial
9.	Return under APT = Risk-free rate + [Factor 1 Beta x Risk premium] + [Factor 2 Beta x Risk premium] Return under APT = 3% + [-1.20 x 2%] + [0.80 x 3%] = 3.00%
10.	Beta is used as a measure of risk under SML approach $$\text{Beta} = \left(\frac{\text{SD of Security}}{\text{SD of Market}}\right) \times \text{correlation coefficient} = \left(\frac{15}{20} \times 0.60\right) = 0.45 \text{ Times}$$ Expected return = 6 + 0.45 x (12 – 6) = 8.70% Security is generating a return higher than required return and hence it is under-valued. So answer is 0.45 times and undervalued
11.	<table><tr><th>Year</th><th>Prob</th><th>Return</th><th>Product</th><th>Deviation</th><th>Pd^2</th></tr><tr><td>1</td><td>0.25</td><td>10</td><td>2.5</td><td>10</td><td>25</td></tr><tr><td>2</td><td>0.25</td><td>20</td><td>5</td><td>20</td><td>100</td></tr><tr><td>3</td><td>0.25</td><td>-10</td><td>-2.5</td><td>-10</td><td>25</td></tr><tr><td>4</td><td>0.25</td><td>-20</td><td>-5</td><td>-20</td><td>100</td></tr><tr><td></td><td></td><td></td><td>0</td><td></td><td>250</td></tr></table>Standard Deviation (%) = $\sqrt{250}$ = 15.81%

12.					
	Prob	**Return**	**Product**	**Deviation**	**Pd^2**
	0.20	10	2.0	8.0	12.80
	0.30	20	6.0	18.0	97.20
	0.40	-10	-4.0	-12.0	57.60
	0.10	-20	-2.0	-22.0	48.40
			2.0		216

Standard Deviation (%) = $\sqrt{216}$ = 14.70%

13.	Total risk equals market risk plus firm-specific risk Explanation: The unsystematic risk for a specific firm is not similar to the unsystematic risk for other firms in the same industry. Unsystematic risk is firm-specific or unique risk. Systematic risk of a portfolio can be changed by adding high-beta or low-beta stocks.
14.	Active Portfolio Strategy aims to outperform the market through active management, while Passive Portfolio Strategy aims to match the market returns.
15.	Default risk is based on company-specific or unsystematic risk
16.	The CAPM is an equilibrium model: its predictions result from market forces acting to return the market to equilibrium. If the expected return on an asset is temporarily too low given its beta according to the SML (which means the market price is too high), **investors will sell the stock until the price falls to the point where the expected return is again equal to that predicted by the SML**
17.	Standard Deviation
18.	The expected rate of return will be higher for the stock of Kaskin, Inc., than that of Quinn, Inc.
19.	Beta = $\dfrac{\text{SD of Security}}{\text{SD of Market}}$ x Correlation coefficient = $\dfrac{0.20}{0.25}$ x 0.80 = 0.64 Times
20.	Financial risk
21.	Correlation coefficient = $\dfrac{\text{Co} - \text{variance of security A and B}}{\text{SD of A x SD of B}} = \dfrac{0.0200}{0.40 \; x \; 0.20} = +0.25$
22.	Beta = $\dfrac{\text{Co} - \text{variance of security and market}}{\text{Variance of market}}$ Beta = $\dfrac{0.23}{0.32 \; x \; 0.32}$ = 2.25
23.	Negative Alpha Securities are overvalued and hence should be sold
24.	Variance of Portfolio = $(\sigma_a W_a)^2 + (\sigma_b W_b)^2 + 2\sigma_a W_a \sigma_b W_b COR_{ab}$ Variance of Portfolio = $(10 \; x \; 0.60)^2 + (20 \; x \; 0.40)^2 + 2(10)(0.60)(20)(0.40)(0.50)$ = 148 Variance of Portfolio = $\sqrt{148}$ = 12.17%
25.	Effect on portfolio risk and return **Explanation:** Modern portfolio theory concludes that an investor should evaluate potential investments from a portfolio perspective and consider how the investment will affect the risk and return characteristics of an investor's portfolio as a whole.
26.	Required Return = Rf + Beta x (Rm – Rf) 15.00% = Rf + (1.50 x Rp) 10.00% = Rf + (0.50 x Rp) Solving the equation, we get risk premium as 5.00% and get risk-free rate as 7.50% • Hence risk-free rate is 7.50% and return of market is 12.50%
27.	Unsystematic risk (diversifiable risk) is the risk that is eliminated when the investor builds a well-diversified portfolio
28.	**Answer is option A** **Explanation:** Fixed income securities will pay fixed interest and hence will have higher impact of inflation. However flexible income securities like equity shares will see an increase in dividend income which can partly offset the impact of inflation
29.	Expected return = Rf + Beta x (Rm – Rf) 24% = 8% + (Beta x 8%); Beta = $\dfrac{16\%}{8\%}$ = 2 Times
30.	SD measures total risk whereas Beta measures systematic risk
31.	Negative Beta

32.	**Year**	**Prob**	**Security A**			**Security B**			**Pd$_a$d$_b$**
			Return	**Product**	**Deviation**	**Return**	**Product**	**Deviation**	
	2006	0.5	10	5	-3	12	6	-3	4.5

	2007	0.5	16	8	3	18	9	3	4.5	
	Total			**13**			**15**		**9**	

Co-variance of stocks = Sum of $Pd_a d_b$ = 9

33.	Required return for Beta of 1.5 Times = 6 + 1.50 x (9 – 6) = 10.50% Return of market is 9% for Beta of 1 Time. Required return of portfolio A is 10.50% for Beta of 1.50 Times **Excess return due to higher risk = 10.50% - 9.00% = 1.50%**
34.	Security A, D and G are inefficient securities **Security B dominates Security A** as it generates higher return with lower risk. Hence Security A is inefficient. **Security E dominates Security D** as it generates higher return with same risk. Hence Security D is inefficient **Security F dominates Security G** as it generates same return with lower risk. Hence Security G is inefficient
35.	Required return as per CAPM = 4 + 1.90 x (8.5 – 4) = 12.55% $$\text{Expected return} = \frac{(27 - 23) + 0.50}{23} \, x \, 100 = 19.57\%$$ Security is likely to generate more return than needed and hence it is undervalued security
36.	Portfolio is fully diversified and hence total risk is equal to systematic risk 2.6250^2 = (Beta x SD of market)^2; 2.6250 = Beta x 1; Beta of security = 2.6250 Times
37.	Decrease **Explanation:** If the correlation coefficient is less than 1, there are benefits to diversification. Thus, adding the stock will reduce the portfolio's standard deviation
38.	The Active Portfolio Strategy involves frequent buying and selling of securities with the goal of outperforming the market
39.	Let us assume X to be the proportion of investment in market and (1-X) to be the proportion of investment in Risk-free security <table><tr><td>Security</td><td>Return</td><td>Weight</td><td>Product</td></tr><tr><td>Market</td><td>8</td><td>X</td><td>8X</td></tr><tr><td>Risk-free</td><td>5</td><td>1-X</td><td>5-5X</td></tr><tr><td>Total</td><td>10</td><td>1</td><td>8X + 5 -5X = 10</td></tr></table>8X + 5 – 5X = 10; 3X = 5; X = 166.67%; Hence investor should invest 166.67% in market portfolio and borrow 66.67% from risk-free security. Investment in market security = Rs.1,66,667; Borrowing from market = Rs.66,667
40.	Aggressive approach is to consider higher rate of 4.60%
41.	The rates of return tend to move in the same direction relative to their individual means
42.	Expected return = 5 + 0.80 x 7 = 10.60%
43.	Beta
44.	$$\text{Beta} = \frac{\% \text{ change in security}}{\% \text{ change in market}} = \frac{12}{-6} = -2 \text{ Times}$$
45.	Covariance between A and B = Beta of company A x Beta of Company B x Variance of market = 1.50 x 2 x 0.1 x 0.1 = 0.03
46.	$$\text{Weight of Security 1} = \frac{\text{Variance of Security 2} - \text{Covariance of 1 \& 2}}{\text{Variance of Security 1} + \text{Variance of Security 2} - 2\text{Covariance of 1 \& 2}}$$ $$\text{Weight of Security 1} = \frac{126.98 + 144.25}{167.75 + 126.98 + 2(144.25)} = \frac{271.23}{583.23} = 0.4650$$
47.	100% in Stock B **Explanation:** Since the stocks are perfectly correlated, there is no benefit from diversification. So, invest in the stock with the lowest risk
48.	Treynor Ratio
49.	Constant Proportion Portfolio Insurance (CPPI) Policy
50.	Security has perfect positive correlation and hence has correlation coefficient of +1 Systematic risk = SD of security x Correlation = 0.20 x 1 = 0.20 Unsystematic risk = 0.20 - 0.20 = 0
51.	Coefficient of determination as per variance approach (r^2) = 0.80 x 0.80 = 0.64 Systematic risk = 400 x 0.64 = 256 Unsystematic risk = 400 - 256 = 144

52.	The Passive Portfolio Strategy relies on a buy-and-hold approach without frequent rebalancing.
53.	Return of security = Rf + Beta x (Rm − Rf) 8% = 5% − 0.5 x (Rm − 5%); 3% = −0.5Rm + 2.5%; 0.5% = −0.5Rm; **Rm = −1%**
54.	Unsystematic risk
55.	A portfolio is said to be efficient if we cannot increase the expected return without increasing risk. In all other situation it was possible to improve returns without increasing risk (or) reduce risk without impact on returns. All other situations are inefficient portfolio as the company is yet to attain the stage of optimal portfolio
56.	Unsystematic risk = Weighted average of individual unsystematic risk with weights square being the assigned weights Unsystematic risk = [0.02 x 0.80 x 0.80] + [0.05 x 0.20 x 0.20] = 0.0148
57.	Buy and Hold Policy
58.	Constant Mix Policy
59.	<table><tr><th>Particulars</th><th>Variance Approach</th></tr><tr><td>Total Risk</td><td>200.22</td></tr><tr><td>Systematic risk</td><td>161.29</td></tr><tr><td>[SD of Market x Beta of Portfolio]^2</td><td>$(0.8467 \, x \, 15)^2$</td></tr><tr><td>Unsystematic risk (bal figure)</td><td>38.93</td></tr></table>
60.	Inflation erodes the purchasing power of bond yields, making bonds less desirable during inflationary periods
61.	Constant Proportion Portfolio Insurance
62.	Right of it and below it. If a point in the frontier is to right of it then it would mean that security carries more risk for same level of return. If a point in the frontier is below of it then it would mean that it is earning lower return for same amount of risk.
63.	Unsystematic risk
64.	Return = Rf + Beta x (Risk premium of market) = 4% + (2 x 8%) = 20.00%
65.	Perfectly positive correlation between securities
66.	Return under APT = Risk free rate + (Factor 1 Beta x Change in Factor 1) + (Factor 2 Beta x Change in Factor 2) Return under APT = 9.25 + (1.20 x 0) + (1.75 x 1.50) = 11.88%
67.	Required return as per SML = Rf + Beta x (Rm – Rf) = 6 + 1.50 x (10 – 6) = 12.00% Required return as per CML $= R_f + \dfrac{\text{SD of Security}}{\text{SD of Market}} \times (R_m - R_f) = 6 + \left(\dfrac{0.12}{0.06} x (10 - 6)\right) = 14.00\%$ Hence answer is 12% and 14%
68.	Zero
69.	<table><tr><th>Security</th><th>Beta</th><th>Weight</th><th>Product</th></tr><tr><td>Equity</td><td>1.30</td><td>0.75</td><td>0.975</td></tr><tr><td>Debt</td><td>0.00</td><td>0.1625</td><td>0</td></tr><tr><td>**Firm**</td><td>**1.0685**</td><td>**0.9125**</td><td>**0.975**</td></tr></table> Beta of debt will be zero in the absence of information; Weight of debt = 0.25 x (1 – Tax rate) = 0.25 x 0.65 = 0.1625 Beta of Assets $= \dfrac{\text{Sum of Product}}{\text{Sum of weight}} = \dfrac{0.975}{0.9125} = 1.0685$
70.	Investment in risky portfolio = 1.5 Times; Borrowing = -0.5 times Return = [20% x 1.5] + [10% x -0.5] = 25%
71.	Portfolio risk will increase if the correlation co-efficient moves gradually from -1 to 1.
72.	Correlation of +1
73.	Maturity value of equity $= \dfrac{1,00,000}{100} \, x \, 125 = 1,25,000$ Maturity value of debt = 1,00,000 Total maturity value = 1,25,000 + 1,00,000 = Rs.2,25,000
74.	<table><tr><th>Particulars</th><th>Day 1</th><th>Fall before</th><th>Fall after</th><th>Maturity</th></tr><tr><td></td><td></td><td>80,000</td><td></td><td>1,40,625</td></tr><tr><td>Equity</td><td>1,00,000</td><td>[1,00,000 x 80/100]</td><td>90,000</td><td>[90,000 x 125/80]</td></tr><tr><td>Bond</td><td>1,00,000</td><td>1,00,000</td><td>90,000</td><td>90,000</td></tr></table>

		Total Value	2,00,000	1,80,000	1,80,000	2,30,625	

75.	Beta of Assets = Beta of Liabilities Beta of Assets $= \dfrac{(2 \ x \ 2cr) + (0 \ x \ 2cr)}{2cr + 2cr} = \dfrac{4cr}{4cr} = 1$ Time
76.	Equity Beta and Asset Beta
77.	SD of combination of risky portfolio and risk-free asset = [SD of risky portfolio x weight of risky portfolio] = [20 x 1.50] = 30%
78.	Floor value = Investment – Maximum decline = 10,00,000 – 10% = Rs.9,00,000 Investment in equity = 2 x [Portfolio value – Floor value] = 2 x [10,00,000 – 9,00,000] = 2,00,000
79.	**Computation of overall Beta of ABC Limited** <table><tr><td>Source</td><td>Beta</td><td>Weight</td><td>Product</td></tr><tr><td>Equity</td><td>1.10</td><td>4</td><td>4.40</td></tr><tr><td>Debt</td><td>0</td><td>0.7</td><td>0</td></tr><tr><td>Overall</td><td>0.9362</td><td>4.70</td><td>4.40</td></tr></table>**Computation of Equity Beta of XYZ Limited** Let us assume equity beta of XYZ Limited to be A <table><tr><td>Source</td><td>Beta</td><td>Weight</td><td>Product</td></tr><tr><td>Equity</td><td>A</td><td>4</td><td>4A</td></tr><tr><td>Debt</td><td>0</td><td>2.1</td><td>0</td></tr><tr><td>Overall</td><td>0.9362</td><td>6.1</td><td>5.7108 [0.9362 x 6.10]</td></tr></table>$4A = 5.7108; A = \dfrac{5.7108}{4} = 1.4277$ Times **Equity Beta of XYZ Limited = 1.4277 Times**
80.	Required return as per characteristic line = Beta x Return of Market = 2 x 8% = 16% Alpha = Actual return – required return = 12% - 16% = -4.00% Characteristic Line = Alpha + (Beta x Return of Market) **Characteristic Line = -4.00% +(2 x Rm)**
81.	Investors can lend at the risk-free rate, but borrow at a higher rate **Explanation:** Capital market theory assumes that investors can borrow or lend at the risk-free rate. The other statements are basic assumptions of capital market theory.
82.	Unsystematic risk
83.	Strategic Asset Allocation **Explanation:** Strategic Asset Allocation is a passive investment approach where investors set a target asset allocation mix based on their financial goals, risk tolerance, and time horizon. Once the allocation is determined, it remains fixed for the long term, and no attempt is made to time the market or make short-term adjustments.
84.	Covariance between security X and Security X is basically variance of Security X $SD = \sqrt{4.80} = 2.19$
85.	Real Estate Investment Trusts (REITs)
86.	More if she bought Ashok Leyland. **Explanation:** Covariance between TCS and Ashok Leyland is negative and hence will provide scope for more cost reduction.
87.	Pure Yield Pickup swap
88.	Sovereign Gold Bonds
89.	Venture Capital
90.	Ladder Strategy
91.	To take advantage of undervalued securities of companies facing financial difficulties, with the expectation of high returns in case of successful restructuring
92.	Long Position in debt and short position in equity **Explanation:** In case company's condition improves because of priority, the investor will get his interest payment which shall be more than the dividend on his short position in equity shares. If company's condition further deteriorates the value of both share and debenture goes down. He will make good profit from his short position.
93.	Greater **Explanation:** Perfect positive correlation (r = +1) of the returns of two assets offers no risk reduction, whereas perfect negative correlation (r = -1) offers the greatest risk reduction

94.	Tactical Asset Allocation
	Explanation: Tactical Asset Allocation is an active investment strategy where portfolio managers make short-term adjustments to the asset allocation based on their market forecasts and economic analysis. Unlike Strategic Asset Allocation (Option A), which maintains a fixed long-term asset mix, Tactical Asset Allocation aims to capitalize on perceived market opportunities
95.	Sharpe Ratio
96.	Beta of AAA $= \left(\dfrac{0.50}{0.20}\right)$ x 0.60 = 1.50. Hence AAA has highest Beta (systematic risk) Unsystematic risk of AAA = 0.50 – (1.50 x 0.20) = 0.20 Unsystematic risk of BBB = 0.50 – (1 x 0.20) = 0.30 Hence BBB has highest unsystematic risk. So AAA has highest systematic risk and BBB has highest unsystematic risk
97.	Systematic risk
98.	All of these choices are correct
99.	Is correctly Valued. Beta of security is same as market and return of security is also same as that of market
100.	The portfolio planning phase is concerned with gathering relevant information about the client's investment objectives, risk tolerance, and time horizon. It involves conducting a thorough assessment of the client's financial situation, investment goals, and constraints.
101.	The portfolio monitoring phase involves the continuous review and assessment of the portfolio's performance. It includes monitoring the individual investments, tracking their performance, and making necessary adjustments to maintain alignment with the investment objectives.
102.	The Capital Asset Pricing Model (CAPM) would be most suitable for guiding LMN Capital in managing the client's portfolio to minimize systematic risk. CAPM provides a framework for determining the **expected return of an asset based on its systematic risk (beta)**
103.	Currency exchange rate risk falls under systematic risk as it is influenced by macroeconomic factors such as interest rates, inflation, and global economic conditions
104.	Lowest
105.	Unsystematic risk. Unsystematic risk (diversifiable risk) can be eliminated though the process of diversification
106.	Industry-wide competitive pressures fall under unsystematic risk as they are specific to the industry in which the company operates. These pressures may include pricing competition, new entrants, or changes in consumer preferences. Such risks can be mitigated through diversification by including stocks from different industries in the portfolio.
107.	Sharpe Ratio. Sharpe ratio is useful for undiversified portfolio and sector specific funds will carry unsystematic risk
108.	Overvalued. Security is not able to generate the required return and hence we would be selling such securities (overvalued)

109.					

Year	Company A return (X)	Market return (Y)	XY	Y^2
2007	13	12	156	144
2008	11.5	11	126.5	121
2009	9.8	9	88.2	81
Sum	**34.3**	**32**	**370.7**	**346**
Average	**11.43**	**10.67**		

$$\text{Beta} = \frac{\left(\sum XY - n(\text{Mean of X})(\text{Mean of Y})\right)}{\sum Y^2 - n(\text{Mean of Y})^2}$$

$$\text{Beta} = \frac{(370.7 - 3(11.43)(10.67))}{346 - 3\,(10.67^2)} = \frac{4.8257}{4.4533} = \mathbf{1.0836\ Times}$$

110.	Required return = Rf + Beta x (Rm – Rf) Required return = 6 + 1.40 x (10 - 6) = 11.60% **Note:** Security is 40% more riskier than the market and hence the same will have Beta of 1.4 Times
111.	The correlation coefficient ranges from -1 to +1. A correlation coefficient of 0.10 indicates a weak positive linear relationship between the returns of two assets.
112.	Capital market line (Standard deviation) and Security market line (Beta)

113.	According to the Markowitz model, determining the optimal asset allocation involves assessing the correlation between different assets. By selecting assets that have low or negative correlations, the portfolio can achieve diversification benefits
114.	Weight of Security A = a + b (weight of Security B) 0.50 = a + 0.25b ………….. (Equation 1) 0.70 = a + 0.20b…………. (Equation 2) Solving equations, we get b = -4 and a = 1.5 **Critical line:** Weight of Security A = 1.50 – 4(Weight of Security B) 0.20 = 1.50 – 4(Weight of Security B) 4(Weight of Security B) = 1.30 **Weight of Security B = 1.30/4 = 0.325** **Weight of Security C = 1 -0.0325 – 0.20 = 0.475**
115.	According to the Markowitz model, an optimal risk-return trade-off can be achieved by selecting asset combinations that lie on the efficient frontier. The efficient frontier represents the set of portfolios that offer the highest return for a given level of risk or the lowest risk for a given level of return
116.	Decrease **Explanation:** When the beta of a stock increases, its required return will increase. This increases the discount rate investors use to estimate the present value of the stock's future cash flows, which decreases the value of the stock.
117.	Lower **Explanation:** A premium bond sells at more than face value, thus as time passes the bond value will converge upon the face value

Chapter 7 – Securitization

1. Which of the following is NOT a key characteristic of a pass-through certificate (PTC) issued in a securitization transaction in India?
    a. PTCs offer credit risk exposure to the investors.
    b. PTCs provide a pro-rata share in the cash flows from the underlying pool of assets.
    c. PTCs can be traded on the stock exchanges, facilitating liquidity.
    d. PTCs do not require a credit rating from a recognized credit rating agency.

2. Which of the following statements best describes the concept of "tranching" in securitization?
    a. Tranching is the process of segregating securitized assets based on their maturity dates to align with investor preferences.
    b. Tranching refers to the division of securitized assets into different classes of securities, each with varying risk and return profiles.
    c. Tranching involves the creation of a secondary market for the securitized assets to increase their liquidity.
    d. Tranching allows investors to transfer their rights and interests in the securitized assets to third parties

3. Which of the following statements is true regarding the role of a trustee in a securitization transaction in India?
    a. The trustee acts as an intermediary between the originator and the investors.
    b. The trustee is responsible for originating the underlying pool of assets.
    c. The trustee is exempt from any fiduciary responsibilities towards the investors.
    d. The trustee is not involved in the enforcement of security interests on behalf of the investors.

4. In a securitization transaction, which of the following statements accurately describes the role of the "special purpose vehicle (SPV)"?
    a. The SPV acts as the originator of the securitized assets and is responsible for their collection and management.
    b. The SPV is an intermediary that evaluates the creditworthiness of the investors before allowing them to purchase the securitized securities.
    c. The SPV is a legal entity created solely for the purpose of holding and managing the securitized assets on behalf of the investors.
    d. The SPV provides credit enhancement to the originator, ensuring a higher credit rating for the securitized securities

5. _____ represent the portion of the securitized assets where the interest payments are separated and sold as a distinct security
    a. PTC
    b. PTS
    c. Interest only strips
    d. Principal only strips

6. Who is responsible for collecting cash flows from the underlying assets and initiate legal action in case of default?
    a. Investor
    b. Servicer
    c. Trustee
    d. SPV

7. _____ provide investors with ownership rights to the underlying securitized assets, allowing them to participate in the cash flows directly
    a. PTC

    b. PTS

    c. Stripped Securities

8. Which of the following statements accurately differentiates between "tokenization" and "securitization"?

    a. Tokenization and securitization are interchangeable terms used to describe the process of converting physical assets into digital tokens for trading purposes.

    b. Tokenization involves the bundling of multiple financial assets into tradable securities, while securitization refers to the conversion of physical assets into digital tokens.

    c. Tokenization is limited to the financial industry, primarily focusing on converting real estate assets into digital tokens, whereas securitization covers a broader range of assets.

    d. Tokenization and securitization both involve converting assets into tradable forms, but tokenization specifically refers to the process in the context of blockchain technology.

9. _____ is the party who owe money and form the basis of securitization transaction

    a. Obligor

    b. Originator

    c. Investor

    d. SPV

10. Which of the following accurately defines "credit risk" in securitization?

    a. Credit risk refers to the potential loss of value in securitized instruments due to fluctuations in interest rates.

    b. Credit risk represents the uncertainty of receiving expected cash flows from the underlying securitized assets due to borrower defaults.

    c. Credit risk pertains to the possibility of the originator repurchasing the securitized assets at a lower price during the transaction.

    d. Credit risk involves the legal uncertainties related to the enforceability of the securitization transaction contracts.

11. Which of the following statements accurately describes the concept of "tokenization" in the context of blockchain technology?

    a. Tokenization is the process of converting physical assets, such as real estate or precious metals, into digital tokens for ease of trading.

    b. Tokenization refers to the encryption of sensitive data using cryptographic techniques to protect it from unauthorized access.

    c. Tokenization is the creation of a new cryptocurrency by forking an existing blockchain network and introducing new features.

    d. Tokenization is the process of breaking down a large transaction into smaller units to enhance its efficiency and speed on the blockchain.

12. Which of the following factors significantly impacts the pricing of securitized instruments in the secondary market?

    a. The credit rating assigned by the credit rating agencies to the securitized instruments, reflecting their creditworthiness.

    b. The interest rate set by the central bank, influencing the overall cost of borrowing in the economy.

    c. The maturity period of the securitized instruments, affecting their sensitivity to interest rate fluctuations.

    d. The originator's reputation and track record, indicating the likelihood of timely cash flows from the underlying assets.

13. How does "interest rate risk" impact the pricing of securitized instruments?

a. As market interest rates rise, the prices of fixed-rate securitized instruments increase, providing higher yields for investors.

b. As market interest rates rise, the prices of fixed-rate securitized instruments decrease, resulting in higher yields for investors.

c. As market interest rates rise, the prices of floating-rate securitized instruments decrease, reducing yields for investors.

d. As market interest rates rise, the prices of floating-rate securitized instruments increase, providing higher yields for investors.

14. In _____ in case of early retirement of receivables the surplus cash can be used for short-term yield
    a. PTC
    b. PTS

15. _____ refer to a type of asset-backed security where the principal and interest payments are separated and sold as distinct securities
    a. PTC
    b. PTS
    c. Stripped Securities

16. Which of the following is not a primary participant in a securitization transaction?
    a. Originator
    b. SPV
    c. Obligor
    d. Investors

17. Which of the following statements accurately describes the tradability of tokenized assets compared to securitized assets?
    a. Tokenized assets are typically less tradable compared to securitized assets, as tokenization involves dividing physical assets into illiquid digital tokens.
    b. Tokenized assets and securitized assets offer similar levels of tradability, both being easily exchangeable in the secondary market.
    c. Tokenized assets are more tradable than securitized assets, as they are easily divisible into smaller units and can be traded on various blockchain platforms.
    d. Tokenized assets are only tradable on specific cryptocurrency exchanges, while securitized assets are freely tradable on conventional financial markets.

18. Which of the following options accurately describes the "credit enhancement" feature in a securitization transaction?
    a. Credit enhancement is a process of obtaining a higher credit rating for the securities issued in the transaction.
    b. Credit enhancement involves reducing the credit risk associated with the underlying assets by diversifying the asset pool.
    c. Credit enhancement is a mechanism to provide additional protection to the investors by enhancing the creditworthiness of the issuer.
    d. Credit enhancement refers to the use of financial derivatives to hedge against potential credit losses in the securitized assets

Answer:

1.	PTCs do not require a credit rating from a recognized credit rating agency
2.	Tranching refers to the division of securitized assets into different classes of securities, each with varying risk and return profiles.
3.	The trustee acts as an intermediary between the originator and the investors.

4.	The SPV is a legal entity created solely for the purpose of holding and managing the securitized assets on behalf of the investors
5.	Interest only strips
6.	Servicer
7.	PTC
8.	Tokenization and securitization both involve converting assets into tradable forms, but tokenization specifically refers to the process in the context of blockchain technology **Explanation:** While both tokenization and securitization involve converting assets into tradable forms, the key difference lies in the context of the process. Tokenization specifically refers to the conversion of real-world assets into digital tokens using blockchain technology, enabling fractional ownership and improved liquidity. On the other hand, securitization involves bundling financial assets, such as loans or mortgages, into tradable securities to be sold to investors. Option A is incorrect because tokenization and securitization are not interchangeable terms. Option B is incorrect because it inaccurately describes the difference between the two concepts. Option C is incorrect because it does not accurately differentiate the scope of tokenization and securitization
9.	Obligor
10.	Credit risk represents the uncertainty of receiving expected cash flows from the underlying securitized assets due to borrower defaults
11.	Tokenization is the process of converting physical assets, such as real estate or precious metals, into digital tokens for ease of trading.
12.	The credit rating assigned by the credit rating agencies to the securitized instruments, reflecting their creditworthiness.
13.	As market interest rates rise, the prices of fixed-rate securitized instruments decrease, resulting in higher yields for investors. **Explanation:** Interest rate risk in securitization refers to the impact of changes in market interest rates on the pricing of securitized instruments. When market interest rates rise, the fixed interest rates on fixed-rate securitized instruments become less attractive to new investors seeking higher yields. As a result, the prices of existing fixed-rate securitized instruments decrease in the secondary market to align with the prevailing market interest rates. This decrease in prices leads to higher yields for investors who purchased the securities before the interest rate increase
14.	PTS
15.	Stripped Securities
16.	Obligor
17.	Tokenized assets are more tradable than securitized assets, as they are easily divisible into smaller units and can be traded on various blockchain platforms.
18.	Credit enhancement is a mechanism to provide additional protection to the investors by enhancing the creditworthiness of the issuer. **Explanation:** Tokenized assets offer higher tradability compared to securitized assets due to their divisibility into smaller units. Digital tokens can be easily fractionalized, enabling investors to buy and sell even tiny portions of the asset. This enhances liquidity and allows for broader market participation.

Chapter 8 – Mutual Funds

1. Mr.X invested Rs.1,00,000 on 1.4.2010 (NAV of Rs.20; Face value of Rs.10). MF declared dividend of 20% on 1.4.2011 (Nav of Rs.25) and it declared dividend of 50% on 1.3.2012 (NAV of Rs.50). How many units will be allotted on 1.3.2012 due to dividend reinvestment?
   a. 400 units
   b. 500 units
   c. 540 units
   d. 1000 units

2. _____ Schemes are open for both purchase and redemption at pre-specified intervals (monthly, quarterly and annually)
   a. Open-ended
   b. Close-ended
   c. Interval

3. Equity shares were purchased when index was 1,000. Amount of shares purchased is Rs.20 lacs. Index value on NAV valuation date is 1,500. What will be the value of shares if underlying shares have appreciated at double the rate of index appreciation?
   a. 30 lacs
   b. 60 lacs
   c. 20 lacs
   d. 40 lacs

4. Unit price of MF is Rs.20. The public offer price is Rs.21. How much is the front-end load percent?
   a. 1 percent
   b. 5 percent
   c. 10 percent
   d. None of the above

5. Compute tracking error of an index MF from following information

Month	XYZ Nifty Index Fund Return	Nifty 50 return
1	4%	3.7%
2	2%	2.5%
3	-4%	-3.2%
4	1%	1.8%
5	6%	7.2%

   a. 0.315
   b. 0.5652
   c. 1.26
   d. -0.6

6. Mr.X invested Rs.1,00,000 on 1.4.2015 when NAV was Rs.25 per unit. Bonus ratio was 1:4 on 1.10.2015, 1:5 on 1.4.2017, 2:5 on 1.4.2018. How many units will the investor have on 1.4.2018?
   a. 4,000 units
   b. 6,000 units
   c. 8,400 units
   d. 10,000 units

7. A pooled investment with a share price significantly different from its net asset value (NAV) per share is most likely
   a. Open-ended fund
   b. Close-ended fund

8. Maturity period is defined in case of _____
   a. Open-ended
   b. Close-ended
   c. Interval

9. Holding period return = 2.5%. Annual return = 12%. No of days in year = 365; What is the period of holding of investment?
   a. 76 days
   b. 75 days
   c. 1,752 days
   d. None of the above

10. A mutual fund has invested in 10,000 shares (FV of Rs.10 and CMP of Rs.20) of XYZ Limited. XYZ Ltd., on 15th December 2021 in its AGM declared the interim dividend of 10% and bonus shares at 1:10 with the record date of 28th December 2021. How much is the dividend received by MF from XYZ Limited?
    a. Rs.10,000
    b. Rs.11,000
    c. Rs.20,000
    d. Rs.22,000

11. Holding period return for 6 months is 8%. How much is annualized return?
    a. 8%
    b. 16%
    c. 4%

12. Mr. X can earn return of 10 percent on own. Initial expense ratio is 5% and annual expense ratio is 2%. How much should the MF earn to give investor return of 12%?
    a. 12.53
    b. 12
    c. 14
    d. 14.63

13. Opening NAV in April = Rs.20. Dividend equalization for the month of April = Rs.1.00. An investor invested in MF on May 1 at opening NAV(April) + 5% and adjusted for dividend equalization. What is the purchase price of the investor?
    a. Rs.20.40
    b. Rs.21.40
    c. Rs.19.40
    d. Rs.21.00

14. MF X has given annualized return of 9.733%, MF Y has given annualized return of -11.185% and MF Z has given annualized return of 15%. Period of holding in MF X, MF Y and MFZ is 300 days, 124 days and 195 days respectively. Assuming past performance of all three schemes will continue for next one year, what action the investor should take?
    a. Sell holding of MF Y and invest partly in MF X and MF Z
    b. Sell holdings of MF X and MF Y and invest in MF Z
    c. Sell holdings of MF Y and invest in MF Z
    d. Sell holdings of MF Y and invest in MF X

15. MF X has given annualized return of 9.733%, MF Y has given annualized return of -11.185% and MF Z has given annualized return of 15%. Period of holding in MF X, MF Y and MFZ is 300 days, 124

days and 195 days respectively. Mutual fund is charging an exit load of 5% for redemption within one year. What action should investor take in MF X and MF Y?

a. Redeem both MF X and MF Y
b. Redeem MF X and don't redeem MF Y
c. Redeem MF Y and don't redeem MF X
d. Continue with both MF X and MF Y

16. Opening NAV in April = Rs.20. Dividend equalization for the month of April and May = Rs.1.00 and Rs.2.00 respectively. An investor exited in MF on June 1 at opening NAV(April) - 3% and adjusted for dividend equalization. What is the redemption price of the investor?

a. Rs.19.40
b. Rs.16.40
c. Rs.22.40
d. Rs.17.00

17. Fund manages Rs.100 crores of funds. They charge fixed fee of 1%. In addition an incentive of 2 percent is paid in excess of 12 percent returns. The fund has earned returns of 20 percent. How much would be the fee paid to the fund manager?

a. 1 Crores
b. 0.84 Crores
c. 1.40 crores
d. 1.16 crores

18. Which category of equity funds looks for super normal returns for which investment is made in start-ups, IPO and speculative shares?

a. Growth
b. Balanced
c. Aggressive
d. Income

19. Which type of investor is likely to find sector funds more suitable for their investment needs?

a. Investors seeking long-term capital appreciation with a willingness to take on higher industry-specific risk and volatility.
b. Investors looking for a diversified portfolio with exposure to various thematic trends and an active investment approach.
c. Investors with a conservative risk appetite who prioritize regular income and dividend payments.
d. Investors seeking a mix of domestic and international exposure through a broad range of industries.

20. Opening NAV = Rs.20; Closing NAV at end of Month 3 = 21. Dividend paid in month 1 = Rs.2; Dividend paid in Month 2 = 0.50; Dividend declared but not yet paid in month 3 = 0.50. What is annualized return of investor?

a. 20%
b. 80%
c. 17.5%
d. 70%

21. Under what circumstances does a mutual fund implement side pocketing?

a. Side pocketing is implemented when the fund's net asset value (NAV) experiences a significant increase due to a sudden surge in the market.
b. Side pocketing is triggered when a mutual fund faces a liquidity crisis, and it aims to separate illiquid assets from the main portfolio to protect investors.

c. Side pocketing is automatically activated when the fund's benchmark index outperforms its expected returns for consecutive quarters.

d. Side pocketing is applied when the fund manager intends to reallocate the portfolio to optimize performance.

22. Under _____, the Fund Manager is mandated to invest at least 25% each into Large, Mid & Small cap stocks and remaining 25% can be invested at the discretion of the Fund Manager
    a. Flexi-cap
    b. Multi-cap
    c. Small-cap
    d. Mega-cap

23. What is the primary difference between sector funds and thematic funds in terms of their investment focus?
    a. Sector funds focus on long-term capital appreciation by investing in growth-oriented companies, whereas thematic funds prioritize generating regular income through dividend-paying stocks.
    b. Both sector funds and thematic funds invest exclusively in companies with strong environmental, social, and governance (ESG) practices, aiming for sustainable and responsible investing.
    c. Sector funds concentrate on investing in multinational companies with global operations, while thematic funds prioritize domestic companies contributing to the country's economic growth.
    d. Sector funds invest in specific industries or sectors of the economy, while thematic funds invest in a diverse range of companies with common themes or trends.

24. Asset value at beginning of month = Rs.65.78; Annualized return =15%; Distribution made in the form of Dividend and Capital gain is Rs.0.82. How much is the closing NAV of MF?
    a. 66.60
    b. 65.78
    c. 64.96
    d. 67.42

25. For an actively managed mutual funds the role of the fund manager is to _____ whereas for a passively managed mutual funds the role of the fund manager is to _____
    a. Have minimum tracking error and have maximum tracking error
    b. Have minimum tracking error and generate Alpha
    c. Generate Alpha and have maximum tracking error
    d. Generate Alpha and have minimum tracking error

26. How does tracking error impact the performance of ETFs compared to their benchmark indices?
    a. Tracking error refers to the difference in performance between ETFs and their benchmark indices, with a lower tracking error indicating better performance.
    b. ETFs with higher tracking error consistently outperform their benchmark indices due to their active management strategies and ability to generate alpha.
    c. Tracking error arises from the fees and expenses charged by ETFs, and a lower tracking error signifies higher costs for investors.
    d. ETFs with lower tracking error exactly replicate the performance of their benchmark indices, eliminating the potential for generating excess returns.

27. What makes offshore funds unique compared to other mutual funds?
    a. Offshore funds are mutual funds that invest exclusively in overseas companies and are not accessible to domestic investors.

b. Offshore funds are structured as open-end investment companies that offer daily liquidity to investors.
c. Offshore funds are tax-efficient investment vehicles as they are domiciled in tax havens, where there are no capital gains or dividend taxes.
d. Offshore funds charge lower management fees compared to onshore mutual funds due to their international investment focus.

28. _____ is charged at the time an investor purchases the units of a scheme whereas _____ is charged at the time of redeeming the fund
   a. Entry load and no-load
   b. Exit load and no-load
   c. Entry load and exit load
   d. Exit load and entry load

29. _____ are _____ mutual funds in which an investor can invest during a New Fund Offer (NFO). They usually invest in Certificates of Deposits (CDs), Commercial Papers (CPs), Money Market Instruments and Non-Convertible Debentures over fixed investment period
   a. FMP and open-ended
   b. FMP and close-ended
   c. ETF and open-ended
   d. ETF and close-ended

30. What differentiates a direct plan from a regular plan in a mutual fund?
   a. Direct plans have higher expense ratios compared to regular plans due to their direct purchase option from the asset management company, whereas regular plans involve intermediaries that charge additional fees.
   b. Direct plans are designed for retail investors, while regular plans are targeted at institutional investors and high net worth individuals.
   c. Direct plans offer personalized investment advice and portfolio management services, whereas regular plans do not provide such individualized services.
   d. Direct plans do not involve distributors or intermediaries, allowing investors to invest directly with the asset management company, while regular plans involve intermediaries who distribute the fund and charge commissions.

31. Mr. X can earn 15 percent on own. The MF will give him return of 13 percent. Mr.X portfolio value is Rs.100 lacs. Mr.X is a chartered accountant and is currently earned professional income of Rs.45 lacs. Mr. X is spending 10 percent of time in managing his portfolio. If he spends this time on profession, his professional income will increase proportionately. What is the net gain/loss in investing in MF?
   a. Net loss of Rs.2 lacs
   b. Net gain of Rs.3 lacs
   c. Net gain of Rs.5 lacs
   d. Net gain of Rs.2 lacs

32. What differentiates the investment strategies of Hedge Funds from traditional mutual funds and index funds?
   a. Hedge Funds primarily focus on passive investing, aiming to replicate specific market indices, whereas traditional mutual funds and index funds employ active trading strategies to generate alpha.
   b. Hedge Funds utilize leverage and derivatives extensively to amplify returns and manage risk, whereas traditional mutual funds and index funds do not engage in such advanced strategies.

    c. Both Hedge Funds and traditional mutual funds follow a long-only investment approach, while index funds adopt a short-selling strategy to profit from declining markets.

    d. Hedge Funds exclusively invest in high-risk assets, such as cryptocurrencies and startup companies, while traditional mutual funds and index funds prioritize low-risk securities

33. How do performance fees in Hedge Funds differ from management fees?
    a. Hedge Funds charge performance fees as a fixed percentage of assets under management, whereas management fees are based on the fund's returns.
    b. Performance fees are charged based on the fund's absolute returns, while management fees are calculated as a percentage of the fund's net asset value.
    c. Hedge Funds impose performance fees when the fund outperforms a specified benchmark or target, while management fees are charged regardless of the fund's performance.
    d. Performance fees are charged as a percentage of the fund's profits, whereas management fees are a percentage of the fund's total assets.

34. How does the portfolio turnover of quant funds differ from traditional mutual funds?
    a. Quant funds have a higher portfolio turnover compared to traditional mutual funds, as they frequently rebalance their portfolios based on quantitative signals.
    b. Both quant funds and traditional mutual funds have similar portfolio turnover rates, as they both adjust their portfolios regularly to respond to market changes.
    c. Quant funds have a lower portfolio turnover compared to traditional mutual funds, as their quantitative models aim to minimize frequent trades and transaction costs.
    d. Portfolio turnover is not a relevant factor for quant funds, as their investment approach relies on long-term buy-and-hold strategies.

35. Total number of units on day 0 - 1,00,000; NAV on day 0 – 50; New units allotted on day 60 - 20,000 @ NAV of Rs.60; Portfolio appreciation for full year = 60 lacs; Units redeemed on day 120 - 10,000 @ NAV of Rs.120. What will be the closing NAV on day 365 post dividend payout of Rs.1 per unit?
    a. 100
    b. 120
    c. 99
    d. 119

36. How do fund of funds differentiate from other mutual funds?
    a. Fund of funds invest in a single asset class, such as equities or fixed-income, while other mutual funds offer diversified portfolios.
    b. Fund of funds pool assets from various investors and use the proceeds to directly invest in specific companies or projects.
    c. Fund of funds invest exclusively in index funds, while other mutual funds may include actively managed funds in their portfolio.
    d. Fund of funds are mutual funds that invest in other mutual funds, providing investors with broader diversification across different asset classes and investment strategies

37. Value of 14 percent listed bonds = 20 crores (Face value is Rs.15 crores whereas market value is Rs.20 crores). Market expectation on listed bonds is 7 percent. What will be the value of listed bonds for computation of NAV?
    a. 30 Crores
    b. 20 crores
    c. 15 crores
    d. 40 crores

38. NAV as on 1.1.2014 was Rs.10. NAV as on 31.12.2014 is Rs.12. Dividend and capital gain distribution is Rs.0.50 and 1.50. On 31.12.2014 the unit was trading at discount of 2 percent whereas on 1.1.2014 it was trading at premium of 2 percent. How much is the annual return?
    a. 20%
    b. 40%
    c. 35.60%
    d. 34.90%

39. Sharpe Ratio of A = 1.5; Sharpe Ratio of B = 1.65; Sharpe Ratio of C = 1.25; Treynor ratio of A = 8; Treynor Ratio of B = 9; Treynor Ratio of C = 10; The above funds are undiversified. Rank the above three funds in terms of preference?
    a. C,A and B
    b. B, A and C
    c. A, B and C
    d. C, A and B

40. Mutual fund acquired fixed interest securities of Rs.12 crores (Market price = Rs.120 and Face value = Rs.100). The current market price of fixed interest securities is Rs.90. what will be the value of fixed interest securities for computation of NAV?
    a. 12 Crores
    b. 9 Crores
    c. 10.80 Crores
    d. 10 Crores

41. Mr. X invested Rs.1,00,000 when NAV was Rs.10 per unit. The fund declared income distribution of Rs.2 per unit and capital gain distribution of Rs.3 per unit. These amounts were re-invested at NAV of Rs.20 per unit. Closing NAV was Rs.30. What is the rate of return earned by the investor?
    a. 250%
    b. 275%
    c. 200%
    d. 100%

42. Total expenses paid = Rs.800 lacs; Outstanding expenses at end of year = Rs.200 lacs; Outstanding expenses at beginning of year = Rs.500 lacs; No of units outstanding = 100 lacs. What is the expense per unit?
    a. 8.00
    b. 10.00
    c. 5.00
    d. 15.00

43. Sharpe Ratio of MF = 1.5 Times; SD of MF = 15%, Treynor Ratio = 10. What is Beta of MF?
    a. 1.5 Times
    b. 1.5 percent
    c. 2.25 Times
    d. 2.25 percent

44. Units as on 31.03,2020 = 30,000 units. Bonus on 31.03.2016 = 1:4, Bonus on 31.03.2018 = 1:5. Find the number of units allotted on 31.03.2015 (entry date)?
    a. 20,000
    b. 18,000
    c. 15,000
    d. 22,000

45. Risk-free rate of return = 10%; Beta of MF (A) = 1 Times; Jensen's Alpha of MF (A) = 4%; Market return = 14%; SD of MF (A) = 10%. What is reward to volatility ratio of MF (A)?
    a. 8
    b. 0.80
    c. 18
    d. 14

46. Average yield = 6.40%; Period of investment = 5 years; Investment made = Rs.10,00,000; Closing value = ?
    a. 64,000
    b. 10,64,000
    c. 3,20,000
    d. 13,20,000

47. Annual expenses = 20 lacs; No of units = 1 crore; NAV on closing date = 20. What is the annual expense ratio?
    a. 1%
    b. 0.2%
    c. 10%

48. A mutual fund sold shares worth Rs.80 lacs for Rs.88 lacs. It also sold another lot of shares worth Rs.75 lacs for Rs.72 lacs. It earned dividend income of Rs.4 lacs. It has decided to distribute 60% of realized earnings. How much is the overall dividend paid?
    a. 9 lacs
    b. 8 lacs
    c. 7.2 lacs
    d. 5.4 lacs

49. What is the formula to calculate reward to volatility ratio?
    a. Expected return/SD
    b. Expected return/Beta
    c. (Expected return - Risk free return)/SD
    d. (Expected return - Risk free return)/Beta

50. What will be Jensen's Alpha of Sensex/Nifty Index?
    a. 0%
    b. 1%
    c. Cannot be calculated with given information

Answer:

1.	Particulars	Calculation	Amount	
	Units allotted on 1.4.2010	1,00,000/20	5,000	
	Dividend on 1.4.2011	5,000 x 10 x 20%	10,000	
	Units allotted on 1.4.2011	10,000/25	400	
	Dividend on 1.3.2012	5,400 x 10 x 50%	27,000	
	Units allotted on 1.3.2012	27,000/50	540	
2.	Interval			
3.	Index is 1,000 on purchase date and the same has appreciated by 50 percent as the closing index is 1,500. Shares will appreciate at double the rate and hence shares will appreciate by 100 percent. Closing shares value = 20 lacs + 100% = 40 lacs			
4.	Particulars	Calculation	Amount	
	Front end load	Public offer price – unit price	1.00	
	Front end load %	(1/20) x 100	5.00%	

5.	Month	XYZ Nifty Index Fund Return	Nifty 50 return	Differential return	Deviation	Deviation^2	
	1	4	3.7	0.3	0.9	0.81	
	2	2	2.5	-0.5	0.1	0.01	
	3	-4	-3.2	-0.8	-0.2	0.04	
	4	1	1.8	-0.8	-0.2	0.04	
	5	6	7.2	-1.2	-0.6	0.36	
	Average/Total			**-0.6**		**1.26**	
	Variance	$\dfrac{1.26}{n-1} = \dfrac{1.26}{5-1}$				**0.315**	
	SD	$\sqrt{0.315}$				**0.5612**	

6.	Particulars	Calculation	Amount
	Units allotted on 1.4.2015	1,00,000/25	4,000
	Units allotted on 1.10.2015	4,000 x (1/4)	1,000
	Units post bonus issue		**5,000**
	Units allotted on 1.4.2017	5,000 x (1/5)	1,000
	Units post bonus issue		**6,000**
	Units allotted on 1.4.2018	6,000 x (2/5)	2,400
	Units post bonus issue		**8,400**

7.	Close-ended fund **Explanation:** Close-ended funds' share prices can differ significantly from their NAVs. Open-ended fund shares can be purchased and redeemed at their NAVs.
8.	Close-ended
9.	$$\text{Period of Holding} = \frac{\text{Holding Period Return}}{\text{Annual Return}} \times 365 = \frac{2.5}{12} \times 365 = 76 \text{ days}$$
10.	Dividend per share = 10 x 10% = Rs.1.00. Interim dividend will be received only on original shares as the bonus shares are allotted post dividend declaration. Hence Dividend received is equal to Rs.10,000 (10,000 shares x Rs.1.00)
11.	Return for 6 months is 8%. Annualized return for 12 months is 8% x (12/6) = 16%
12.	$$\text{MF Return} = \frac{\text{Own return}}{1-\text{IER}} + \text{AER} = \frac{0.12}{1-0.05} + 0.02 = 0.1263 + 0.02 = 0.1463 \text{ or } 14.63\%$$ **Note:** Investor needs a return of 12 percent. Information on return which investor earns is of no use in this question as question clearly tells that he wants to earn 12 percent
13.	Entry price = Opening NAV + 2% + Dividend equalization Entry price = (20 +2%) + 1 = Rs.21.40
14.	If past returns of all three schemes will continue for next one year, the investor should redeem the units of MFs 'X' and 'Y' and invest the proceeds in MF 'Z'.
15.	**Decision on MF X:** - Redemption of MF X would be invested in MF Z and this would give additional annualized return of 5.27% (15 – 9.733). The investor has currently held this for 300 days and holding this for another 65 days can help investor in saving exit load of 5%. - Return loss in 65 days = 5.27 x (65/365) = 0.94%. - Investor will loss return of only 0.94% and save exit load of 5% and hence he should continue holding this for another 65 days. Hence MF X is not to be redeemed. **Decision on MF Y:** - Redemption of MF Y would be invested in MF Z and this would give additional annualized return of 26.19% (15 –(- 11.185)). The investor has currently held this for 195 days and holding this for another 170 days can help investor in saving exit load of 5%. - Return loss in 170 days = 26.19 x (170/365) = 12.20%. - Investor will loss return of 12.20% and save exit load of 5% and hence he should redeem MF Y immediately **Final answer:**

	• Redeem MF Y and don't redeem MF X
16.	Redemption price = Opening NAV – 3% + Dividend equalization Redemption price = (20 – 3%) + 3.00 = Rs.22.40

17.	Particulars	Calculation	Amount (in Cr)
	Fixed Fees	100 crores x 1%	1.00
	Return earned	100 crores x 20%	20.00
	Less: Return of 12%	100 crores x 12%	-12.00
	Excess return		8.00
	Variable incentive	8 cr x 0.02	0.16
	Total Fees	1 cr + 0.16 cr	1.16

18.	Aggressive
19.	Investors seeking long-term capital appreciation with a willingness to take on higher industry-specific risk and volatility
20.	Annual return = $\dfrac{NAV_1 - NAV_0 + D_1}{NAV_0} \times \dfrac{12}{m} \times 100 = \dfrac{21 - 20 + 3}{20} \times \dfrac{12}{3} \times 100 = 80\%$ **Note:** Investor has earned dividends of Rs.3. It does not matter whether dividend is paid or not as the same would be paid over the near term and it would have impacted the NAV downwards
21.	Side pocketing is triggered when a mutual fund faces a liquidity crisis, and it aims to separate illiquid assets from the main portfolio to protect investors.
22.	Multi-cap
23.	Sector funds invest in specific industries or sectors of the economy, while thematic funds invest in a diverse range of companies with common themes or trends.

24.	Particulars	Amount
	Holding period return [15 x (1/12)]	1.25%
	Return earned in Rs. [65.78 x 1.25%]	0.82
	Less: Dividend	-0.82
	NAV appreciation	0.00
	Closing NAV = Opening NAV	65.78

25.	Generate Alpha and have minimum tracking error
26.	Tracking error refers to the difference in performance between ETFs and their benchmark indices, with a lower tracking error indicating better performance
27.	Offshore funds are tax-efficient investment vehicles as they are domiciled in tax havens, where there are no capital gains or dividend taxes.
28.	Entry load and Exit Load
29.	FMP and close-ended
30.	Direct plans do not involve distributors or intermediaries, allowing investors to invest directly with the asset management company, while regular plans involve intermediaries who distribute the fund and charge commissions.

31.	Particulars	Calculation	Amount
	Net loss in MF investment	100 lacs x 2%	(2,00,000)
	Increase in professional income	90 = 45 lacs 10 = ?	5,00,000
	Net benefit of investing in MF		3,00,000

32.	Hedge Funds utilize leverage and derivatives extensively to amplify returns and manage risk, whereas traditional mutual funds and index funds do not engage in such advanced strategies
33.	Performance fees are charged as a percentage of the fund's profits, whereas management fees are a percentage of the fund's total assets
34.	Quant funds have a higher portfolio turnover compared to traditional mutual funds, as they frequently rebalance their portfolios based on quantitative signals. **Explanation:** Quant funds often have higher portfolio turnover compared to traditional mutual funds because their investment approach involves frequent rebalancing and adjustments based on the signals generated by their mathematical models

35.	Particulars	Calculation	Amount
	Opening net assets	1,00,000 x 50	50,00,000

	Add: Fresh Allotment	20,000 x 60	12,00,000
	Add: Portfolio appreciation		60,00,000
	Less: Redemption	10,000 x 120	-12,00,000
	Closing net assets		**1,10,00,000**
	Closing units	1,00,000 + 20,000 – 10,000	1,10,000
	Closing NAV before dividend		**100.00**
	Less: Dividend		-1.00
	Closing NAV post dividend		**99.00**

36.	Fund of funds are mutual funds that invest in other mutual funds, providing investors with broader diversification across different asset classes and investment strategies

37.	**Particulars**	**Calculation**	**Amount (in cr)**
	Interest on listed bonds	15 crores x 14%	2.10
	Value of bonds	$\dfrac{\text{Interest}}{\text{Investor expectation}} = \dfrac{2.10}{7\%}$	30.00

38.	**Particulars**	**Calculation**	**Amount**
	Unit price as on 1.1.2014	10 + 2%	10.20
	Unit price as on 31.12.2014	12 – 2%	11.76
	Dividend and capital gain		2.00
	Annual return	$\dfrac{(11.76 - 10.20) + 2.00}{10.20} \; x \; 100$	34.90%

39.	The funds are undiversified and hence we should do ranking as per Sharpe Ratio. It is better to have higher Sharpe Ratio. Hence the ranking as per Sharpe Ratio is B, A and C

40.	**Particulars**	**Calculation**	**Amount (in cr)**
	No of securities	12 crores/120	0.10
	Value of securities	0.10 x 90	9.00

41.	**Particulars**	**Calculation**	**Amount**
	Units purchased on day 0	1,00,000/10	10,000
	Amount of dividend	5 x 10,000	50,000
	Re-investment NAV		20.00
	Dividend in units	50,000/20	2,500
	Closing units	10,000 + 2,500	12,500
	Closing value	12,500 x 30	3,75,000
	Less: Investment		-1,00,000
	Return in Rs.		2,75,000
	Return in %	$\dfrac{2,75,000}{1,00,000} \text{x } 100$	275.00%

42.	**Particulars**	**Calculation**	**Amount**
	Total Expenses	Paid + Closing O/s – Opening O/s	500
	No of units		100
	Expense per unit	500/100	5.00

43.	Sharpe Ratio = $\dfrac{\text{Excess Return}}{\text{SD}}$; $1.50 = \dfrac{\text{Excess return}}{0.15}$; Excess return = 0.225 or 22.50% Treynor Ratio = $\dfrac{\text{Excess Return}}{\text{Beta}}$; $10 = \dfrac{22.50}{\text{Beta}}$; Beta = $\dfrac{22.50}{10}$ = 2.25 Times **Beta is expressed in Times and not percentage. Hence answer is 2.25 times**

44.	**Bonus on 31.03.2018:** Closing units = 30,000; Latest bonus date = 31.03.2018; Bonus Ratio = 1:5; Hence closing units as on 31.03.2018 will be 120% of opening units. Opening units = 30,000/120% = 25,000 units **Bonus on 31.03.2016:** Bonus ratio = 1:4. Closing units as on 31.03.2016 will be 125% of opening units. Opening units = 25,000/125% = 20,000 units. Hence units as on 31.03.2015 is 20,000 units

45.	**Particulars**	**Amount**
	Required return of MF 'A' [10 + 1 x [14 -10]	14.00
	Jensen's Alpha	4.00
	Actual return of MF 'A' [14 + 4]	18.00

	Excess return of MF 'A' [18.00 – 10.00]		8.00
	Beta of MF 'A'		1.00
	Reward to Volatility Ratio [Treynor Ratio]		8.00

46.	Particulars	Calculation	Amount
	Return per year	10,00,000 x 6.40%	64,000
	Return for 5 years	64,000 x 5	3,20,000
	Closing value	10,00,000 + 3,20,000	13,20,000

47.	Particulars	Calculation	Amount
	Expenses per unit	20 lacs/1 crore	0.20
	Closing NAV		20
	Expense ratio	0.20/20 x 100	1.00%

48.	Particulars	Calculation	Amount
	Total Capital gain	8 lacs on lot 1 – 3 lacs on lot 2	5,00,000
	Total realized gain	5,00,000 + 4,00,000	9,00,000
	Dividends paid	9,00,000 x 60%	5,40,000

49.	(Expected return - Risk free return)/Beta
50.	Jensen's Alpha is calculated by comparing CAPM return with Actual return. CAPM return = Rf + Beta x (Rm - Rf). CAPM return will be calculated with help of actual market return. Hence Jensen's Alpha for market will always be zero percent as actual return will be equal to CAPM return

Chapter 9 – Derivatives Analysis and Valuation

1. Which of the following is a major risk associated with forward contracts?
    a. Counterparty risk
    b. Market risk
    c. Operational risk
    d. Credit risk

2. Exercise price of call option = 200; Exercise price of Put option = 220; Premium paid/received on call and put option = Rs.6 and Rs.4; You have bought one call option and sold one put option. How much will be the net profit/loss if actual price is Rs.240 on expiry date?
    a. Profit of Rs.40
    b. Profit of Rs.38
    c. Profit of Rs.42
    d. Loss of Rs.42

3. You have purchased 2000 shares of ABC Limited. ABC has a beta of 1.1 with the sensex. You have sold one contract of sensex worth Rs.2,20,000. You have done a perfect hedge with above transactions. What is the current market price of ABC Limited?
    a. 100
    b. 110

4. In a forward contract, if the forward price is higher than the spot price at the contract's inception, what can be said about the market expectation?
    a. The market expects the asset's price to decrease.
    b. The market expects no change in the asset's price.
    c. The market expectation cannot be determined from the forward and spot price
    d. The market expects the asset's price to increase.

5. You have purchased one lot of Nifty at 10,000. Lot size = 100 units. Initial margin = 8% of contract value. Nifty has moved to 9,800 on next day. What will be the balance in margin account post profit/loss?
    a. 80,000
    b. 1,00,000
    c. 60,000
    d. 40,000

6. Which of the following is a difference between futures and forward contracts? Futures contracts are:
    a. Larger than forward contracts
    b. Over-the counter instruments
    c. Standardized

7. Rolling of a futures contract to the next trading day with a new price is called as _____
    a. Physical Settlement
    b. Cash settlement
    c. Mark-to-Market
    d. Margin Settlement

8. Purchased one 3-month call option with a premium of Rs. 30 and an exercise price of Rs. 550. Purchased one 3-month put option with a premium of Rs. 5 and an exercise price of Rs. 450. Price on expiry date is Rs.600. How much is the profit/loss if lot size is 100 shares?
    a. Profit of Rs.5,000
    b. Loss of Rs.3,500
    c. Profit of Rs.1,500

d. Loss of Rs.1,500

9. You bought a CDS contract from Axis Bank on bonds of A Limited by paying annual premium of 1%. The annual premium has now increased to 3%. What inference does this have on credit quality of Bonds of A Limited?
   a. No change in credit quality
   b. Improvement in credit quality
   c. Deterioration in credit quality

10. Spot price of Gold is Rs.40,000 whereas futures price is Rs.42,000. How much is basis?
    a. +2,000
    b. -2,000
    c. 40,000
    d. 42,000

11. Basis is _____ in contango market and _____ in backwardation market
    a. Positive and Negative
    b. Positive and Zero
    c. Zero and Positive
    d. Negative and Positive

12. What is an "in-the-money" option?
    a. An option that has a high premium.
    b. An option with a strike price equal to the current market price of the underlying asset.
    c. An option that has significant potential for profit.
    d. An option that has expired.

13. A basket option
    a. Provides the right to exchange one asset for another asset
    b. Has multiple strike prices
    c. Offers the right to buy or sell a specific amount of an asset at a specified price
    d. Pays out based on the performance of a group of underlying assets

14. Which of the following statements about options is most accurate?
    a. The holder of a put option has the right to sell to the writer of the option.
    b. The holder of a call option has the obligation to sell to the option writer if the stock's price rises above the strike price.
    c. The writer of a put option has the obligation to sell the asset to the holder of the put option

15. Spot price = Rs.1,000; Life of futures = 6 months; Rate of interest = 6% per half year; Actual futures price = Rs.1,100; How much is the possible arbitrage gain?
    a. Rs.40
    b. Rs.20
    c. Rs.70
    d. Arbitrage not possible

16. A European option can be exercised by:
    a. Its holder, only at the expiration of the contract
    b. Its holder, anytime during the term of the contract
    c. Either party, at contract expiration
    d. Either party, anytime during the term of the contract

17. You plan to buy shares of TCS Limited. CMP of TCS is Rs.1,000. You currently don't have money and also intend to pay a maximum of 5 percent more than CMP. What action can be taken in option market to achieve this?
    a. Buy Put option of Exercise price of Rs.1,050
    b. Buy call option of Exercise price of Rs.1,050
    c. Buy Put option of Exercise price of Rs.950
    d. Buy call option of Exercise price of Rs.950

18. Which exotic option has the potential for the largest payout?
    a. Lookback option
    b. Chooser option
    c. Asian option
    d. Binary option

19. Which of the following is least likely a characteristic of futures contracts? Futures contracts
    a. Are backed by the clearinghouse
    b. Require weekly settlement of gains and losses
    c. Are traded in the active secondary market
    d. Are standardized in nature

20. Company A has issued 10% bonds of Rs.50,00,000. Investor A has purchased bonds worth Rs.10,00,000 but is worried about the risk of default. He therefore wants protection against the risk of default and hence has purchased protection from Axis Bank in terms of CDS contract. Company A has defaulted and the recovery rate is 25%. How much is the cash settlement amount to be paid by Axis Bank to Investor A?
    a. Rs.37,50,000
    b. Rs.10,00,000
    c. Rs.50,00,000
    d. Rs.7,50,000

21. _____ can be exercised at any time between the purchase date and expiration date _____ can be exercised on the expiration date
    a. American option and European option
    b. European option and American option

22. Exercise price of put option = 1,000; Price of underlying asset on expiry date = 800; Premium received/paid on put option = 45; How much is the net pay-off of Put writer?
    a. Profit of Rs.45
    b. Loss of Rs.200
    c. Loss of Rs.155
    d. Profit of Rs.155

23. A spread option is an exotic option that allows the holder to:
    a. Choose the spread between the option strike price and the underlying asset price
    b. Profit from the difference between two underlying assets' prices
    c. Exchange the option for another financial instrument
    d. Exercise the option multiple times before expiration

24. Black Scholes Model assumes that the underlying asset will give a rate of return equal to _____
    a. Market rate
    b. CAPM return
    c. Risk-free rate
    d. Between risk-free rate and market rate

25. Delta of call option = 0.3333 Times. What should be the combination of option and share to create risk-less hedge portfolio?
    a. Buy 1 share and Buy 3 call options
    b. Buy 3 shares and Buy 1 call options
    c. Buy 1 share and Sell 3 call options
    d. Buy 3 shares and Sell 1 call options

26. In which situation is the Black-Scholes option pricing model less suitable?
    a. When valuing European-style options with fixed expiration dates.
    b. When the underlying asset's price follows a continuous random walk.
    c. When interest rates and dividend yields are constant over the option's life.
    d. When valuing options with early exercise features.

27. Spot price = 2,400; Fair futures price = 2,300; How much is contango/backwardation?
    a. Contango of 100
    b. Backwardation of 100
    c. Neither contango nor backwardation

28. Exercise price of Put option = Rs.120; Likely intrinsic value on maturity date = Rs.20. Find out the price of the shares quoted at the stock exchange to get the value of the put option as shown above.
    a. Rs.140.00
    b. Rs.100.00
    c. Rs.80.00
    d. Rs.120.00

29. _____ is the degree to which an option price will move given a small change in the underlying stock price
    a. Beta
    b. Delta
    c. Gamma
    d. Theta

30. _____ measures the change in delta for small changes in the underlying asset
    a. Theta
    b. Rho
    c. Gamma
    d. Vega

31. The current price of a flat is Rs.100 lacs. The price can either go up to Rs.110 lacs or Rs.95 lacs by end of one year. Expected annual rental income of flat is 2 lacs. Risk-free rate of return is 8% per annum. What is the probability of price increasing to Rs.110 lacs?
    a. 86.67%
    b. 73.33%
    c. 50.00%
    d. 80.00%

32. ABC Limited has entered into a swap agreement on notional principal of Rs.200 crores. ABC Limited would pay 1% per quarter and receive the quarterly return of sensex. Sensex value on day 0 and day 90 is 20,000 and 21,000. How much is the net cash flow of ABC Limited?
    a. Receive Rs.10 crores
    b. Receive Rs.8 crores
    c. Pay Rs.10 Crores

d. Pay Rs.8 crores

33. Stock is currently trading at Rs.100. One-month interest rate is 12% per annum. What is the fair futures price for 3-month expiry?
    a. Rs.103
    b. Rs.103.03
    c. Rs.103.05

34. You as an investor had purchased a 3 month call option on the equity shares of X Ltd. of Rs.30, of which the current market price is Rs. 560 and the exercise price Rs. 590. You expect the price to range between Rs.540 to Rs.640. The expected share price of X Ltd. and related probability is given below:

Expected Price	540	560	580	600	620	640
Probability	0.10	0.15	0.05	0.35	0.20	0.15

How much is the likely value of call option after three months if the exercise price prevails?
    a. Rs.17.00
    b. Rs.7.00
    c. Rs.50.00
    d. Rs.0.00

35. What feature makes a compound option different from a standard option?
    a. Compound options have an additional cost called the "premium."
    b. Compound options have multiple expiration dates.
    c. Compound options have different underlying assets.
    d. Compound options provide the holder the right to buy or sell another option at a future date.

36. Fair futures price = Rs.1,000; Actual futures price = Rs.1,010; What strategy can help in exploiting arbitrage opportunity and how much will be arbitrage gain/loss?
    a. Buy spot and sell futures; Profit of Rs.10
    b. Buy spot and sell futures; loss of Rs.10
    c. Sell spot and buy futures; Profit of Rs.10
    d. Sell spot and buy futures; Loss of Rs.10

37. A binary option has a fixed payout of Rs.1000 if it finishes "in the money" and a premium of Rs.200. The option has a 70% chance of finishing "in the money" based on market conditions. If a trader buys 10 binary options, what is the expected payoff?
    a. Rs.3,000
    b. -2,000
    c. Rs.10,000
    d. Rs.5,000

38. An investor goes long on two puts of EP of Rs.60 (premium of Rs.5) and goes short on one call each of EP of Rs.55 (premium of Rs.2) and EP of Rs.65 (premium of Rs.7). What will be the net profit/loss if stock closes at Rs.62 on expiry date?
    a. Profit of Rs.3
    b. Profit of Rs.4
    c. Loss of Rs.1
    d. Loss of Rs.4

39. Which of the following statements is true?
    a. Margin requirement on index futures will be same as margin requirement on stock futures
    b. Margin requirement on index futures will be less than margin requirement on stock futures
    c. Margin requirement on index futures will be more than margin requirement on stock futures

40. In a synthetic collateralized debt obligation (CDO), the CDO issuer:
    a. Holds the actual underlying assets as collateral
    b. Issues bonds backed by cash reserves
    c. Transfers the credit risk using credit default swaps (CDS)
    d. Utilizes a special purpose vehicle (SPV) to pool the assets

41. A stock is currently priced at Rs.50. It is known that in the first 6 months of current year from now prices will either rise by 20% or go down by 20%, further in the later half of the year prices may again up by 20% or go down by 20%. Suppose risk free rate is 5% continuous compounded and strike rate is Rs.52. How much is the downside probability?
    a. 45.00%
    b. 56.35%
    c. 43.65%
    d. 50.00%

42. ABC Ltd. is a pharmaceutical company possessing a patent of a drug called 'Aidrex', a medicine for aids patient. Being an approach drug ABC Ltd. holds the right of production of drugs and its marketing. The period of patent is 15 years after which any other pharmaceutical company produce the drug with same formula. It is estimated that company shall require to incur $ 12.5 million for development and market of the drug. As per a survey conducted the expected present value of cashflows from the sale of drug during the period of 15 years shall be $ 16.7 million. Cash flow from the previous similar type of drug have exhibited a variance of 26.8% of the present value of cashflows. The current yield on Treasury Bonds of similar duration (15 years) is 7.8%. How much is the dividend yield in black scholes model for valuation of option?
    a. No dividend
    b. 15%
    c. 6.67%
    d. 10.00%

43. An Asian call option has a strike price of Rs.50 and is based on the average price of the underlying asset over the last three months. The average asset price in the first month is Rs.48, in the second month is Rs.52, and in the third month is Rs.55. How much is the gross payoff to the option buyer on expiration date?
    a. Rs.5.00
    b. Nil
    c. Rs.1.67
    d. Rs.2

44. You have bought protection using a 2-year CDS on CDX-IG (125 constituent) index. The notional is Rs.200 crores. Company X, an index constituent defaults and trades at 25% of par. Compute the payoff on the CDS on account of default of X?
    a. 1.6 crores
    b. 150 crores
    c. 1.2 crores
    d. 200 crores

45. A stock is currently trading at Rs.100. It will pay dividend of Rs.2 in one month. Interest rate = 12 percent per annum. Time period =3 months. What is fair futures price? $e^{0.01} = 1.01005$; $e^{0.02} = 1.02020$; $e^{0.03} = 1.03045$
    a. Rs.102.02
    b. Rs.103.05
    c. Rs.104.09
    d. Rs.101.00

46. Three month forward price is Rs.206. Interest rate is 12% per annum. What is the spot price if the company is likely to pay dividend of Rs.2 today?
    a. Rs.208
    b. Rs.200
    c. Rs.198
    d. Rs.202

47. Which party typically pays the periodic premium in a credit default swap agreement?
    a. Buyer of the CDS
    b. Seller of the CDS
    c. Underlying asset issuer
    d. Regulatory authority

48. You deposited a margin of Rs.10,000 for entering a futures contract. You also paid a commission of Rs.1,000 to broker. You made a gross profit of Rs.5,000 on futures and paid a commission of Rs.1,000 for exit. How much is the rate of return earned?
    a. 50%
    b. 30%
    c. 33.33%
    d. 27.27%

49. A lookback option provides the holder with the:
    a. Right to exchange one asset for another asset
    b. Right to buy or sell a specific amount of an asset at a specified price
    c. Right to receive the highest (for call) or lowest (for put) asset price during the option's life
    d. Right to exercise the option at any time before expiration

50. Spot price of Gold is Rs.800. Interest rate is 12% per annum. What is the fair price of 3 month futures if storage cost of Rs.5 is to be paid in month 3?
    a. Rs.805
    b. Rs.824
    c. Rs.829
    d. Rs.819

51. Which option valuation model can be used to value an American option?
    a. Black Scholes Model
    b. Put call parity theory
    c. Binomial Model

52. In an arbitrage collateralized debt obligation (CDO), the objective is to:
    a. Transfer credit risk from the CDO issuer to investors
    b. Generate profits from price discrepancies in underlying assets
    c. Hedge against currency fluctuations in international CDOs
    d. Ensure stable and consistent cash flow for the CDO investors

53. A lookback call option has a strike price of Rs.80, and the underlying asset's prices during the option's life are as follows: Rs.75, Rs.82, Rs.78 and Rs.85. The closing price on expiration is Rs.80. What is the profit for the option holder?
    a. Nil
    b. Rs.5
    c. Rs.2
    d. Rs.3.50

54. A deeply out of the money option will have delta closer to _____ and a deeply in the money option will have delta closer to _____
    a. 0 and 0
    b. 1 and 1
    c. 1 and 0
    d. 0 and 1

55. What lesson do derivatives mishaps teach regarding hedging and speculation?
    a. A hedger should not use derivatives for risk management purposes
    b. Speculation with derivatives is always profitable
    c. Ensure that a hedger does not become a speculator
    d. Derivatives are only suitable for speculative purposes

56. Spot price = Rs.800; Cost to carry = Rs.20; You need to consider Rs.810 as the fair futures price. How much is the convenience Yield?
    a. No convenience yield
    b. Rs.20
    c. Rs.10

57. A Rice Trader has planned to sell 22000 kg of Rice after 3 months from now. Interpret his current position in cash market?
    a. Short Position
    b. Long Position
    c. No Position

58. The current share price of Infosys Limited is Rs.100. Price can either go up to Rs.120 and decrease to Rs.90 at end of 6 months. CCRFI is 10% per annum. What is the probability of price increasing to Rs.120?
    a. 50%
    b. 66.67%
    c. 50.43%
    d. 68.40%

59. What happens to the value of an option as the expiration date approaches?
    a. The value of both call and put options increases.
    b. The value of both call and put options decreases.
    c. The value of call options increases, and the value of put options decreases.
    d. The value of call options decreases, and the value of put options increases.

60. Dividend Yield = 4% per annum. 75% of stock will pay dividend over next 6 months. ; Spot price = Rs.1,000; Risk-free rate = 12% per annum; Life of futures = 6 months; What is fair futures price? Note: Use normal compounding
    a. Rs.1060
    b. Rs.1040
    c. Rs.1030
    d. Rs.1050

61. Timing option (part of real option) falls under the category of _____
    a. American call option
    b. European call option
    c. American put option
    d. European put option

62. In a credit default swap, the protection buyer benefits when:
    a. The credit rating of the reference asset improves
    b. The credit spread of the reference asset widens
    c. The price of the reference asset increases
    d. The reference asset matures

63. Which of the following is a key difference between a forward contract and a futures contract?
    a. Futures contracts are standardized, while forward contracts are not.
    b. Futures contracts are only used for financial assets, while forward contracts are used for physical assets.
    c. Forward contracts are exchange-traded, while futures contracts are over-the-counter (OTC) instruments.
    d. Forward contracts have daily settlement, while futures contracts have no daily settlement.

64. The premium of CDS has _____ with risk attached with loans
    a. No relationship
    b. Positive relationship
    c. Negative relationship

65. Current market price of share is Rs.930; Exercise price of share is Rs.900; Present value of exercise price as per BS Model is Rs.888.08; N(d1) = 0.7069; N(d2) = 0.6783; Dividend yield on index is 3% per annum and life of option is 2 months. How much is the value of call option as per BS model?
    a. Rs.55.03
    b. Rs.51.78
    c. Rs.43.69
    d. Rs.46.95

66. Value of portfolio held = Rs.20,00,000. You have decided to sell 30% of your portfolio and replace the same with risk-free asset to reduce Beta. You are holding shares of multiple companies and one of them is ABC Limited (5,000 shares). How many shares of ABC Limited will be held by the investor in new portfolio post risk reduction?
    a. 3,500 shares
    b. 1,500 shares
    c. 5,000 shares
    d. Nil

67. You buy 10,000 shares of ABC Limited at a price of Rs.20 per share. You got a perfect hedge with position in Nifty futures. Nifty fell by 2% and shares of ABC Limited increased by 5%. You made overall profit of Rs.12,000. How much is the Beta of ABC Limited?
    a. 2.50 Times
    b. -2.50 Times
    c. 0.50 Times
    d. 2 Times

68. An investor has used delta hedging technique to hedge his portfolio. What is necessary for success of delta-hedging technique?
    a. High Gamma
    b. Low Gamma
    c. High exercise price
    d. Low exercise price

69. A CDS has balance duration of 10 years. The original premium was 500 bps and now the premium has widened to 700 bps. Notional amount of principal of Rs.10,00,000. How much is the gain/loss to protection buyer?
    a. Rs.20,000 (Profit)
    b. Rs.20,000 (loss)
    c. Rs.2,00,000 (Profit)
    d. Rs.2,00,000 (loss)

70. What happens to the value of a long forward contract on an asset as the asset's price increases?
    a. The value of the forward contract decreases.
    b. The value of the forward contract increases.
    c. The value of the forward contract remains unchanged.
    d. The value of the forward contract depends on interest rates.

71. A stock is currently trading at Rs.125 and is likely to pay annual dividend of Rs.4 after one year. Risk-free interest rate is 8% per annum. Lot size of contract is 2,000 shares. An investor took short position on futures and the spot price fell by 6%. How much is the profit or loss on the position taken by the investor?
    a. Rs.15,000 (profit)
    b. Rs.15,000 (loss)
    c. Rs.16,200 (profit)
    d. Rs.16,200 (loss)

72. One of the crucial lessons from derivatives mishaps is:
    a. Avoid using derivatives altogether
    b. Delegate all derivative-related decision-making to the Treasury Department
    c. Specify risk limits and ensure separation of front, middle, and back offices
    d. Only buy complex derivatives to maximize potential profits

73. What is short call in the context of a real option?
    a. Any flexibility to invest, to enter a business, to expand a business
    b. Any flexibility to disinvest or to exit from a business
    c. Any commitment to disinvest upon the action of another party.
    d. Any commitment to invest upon the action of another party

74. You have bought a call option with exercise price of Rs.100. You have sold a call option with exercise price of Rs.80. Premium on Rs.100 option was Rs.10 and Premium on Rs.80 option was Rs.25. What will be the break-even price?
    a. 100
    b. 80
    c. 115
    d. 95

75. You have created a perfect hedge for your investment. You have a share portfolio of Rs.10,00,000 which has Beta of 2 Times. You have entered into short position in futures for perfect hedge. Compute profit/loss if share portfolio increased by 10% and Nifty increased by 8%
    a. Rs.1,00,000 (profit)
    b. Rs.60,000 (profit)
    c. Rs.1,00,000 (loss)
    d. Rs.60,000 (loss)

76. _____ occurs due to the different between existing price in the futures market and the cash price of the underlying securities

     a. Price risk
     b. Default risk
     c. Basis risk
     d. Timing risk

77. Current market price of Share = Rs.415; Exercise price of share = Rs.400; Present value of exercise price = Rs.395.03; N(d1) = 0.6926; N (d2) = 0.6529. How much is the value of call option?
     a. Rs.26.27
     b. Rs.29.51
     c. Rs.19.12
     d. Rs.15.00

78. Spot price of shares = Rs.100; CCRFI = 12% per annum; Dividend of Rs.2 would be paid in 2 months; Life of option = 3 Months. Value of Put of an in-the-money option is Rs.10. How much is the value of an in-the-money Call option?
     a. Rs.8.04
     b. Rs.12.96
     c. Rs.11.00
     d. Rs.13.00

79. An electricity locational basis swap allows market participants to:
     a. Swap electricity prices between different delivery locations
     b. Swap electricity for other commodities
     c. Hedge against currency exchange rate fluctuations
     d. Obtain physical delivery of electricity at a specific location

80. A company issues one-year bond and the same has a probability of default of 2%. The expected recovery rate is 20%. How much would the CDS spread for this bond?
     a. 2.00%
     b. 1.60%
     c. 4.00%
     d. 3.20%

81. What is the primary purpose of using real options in investment decisions?
     a. Risk reduction
     b. Portfolio diversification
     c. Capital budgeting
     d. Speculative trading

82. Spot price = Rs.20,000; Fair Futures Price = Rs.24,000; Actual Futures Price = Rs.25,000; Life of futures = 6 months. How much is the implied risk-free rate assuming no dividend on futures contract?
     a. 20%
     b. 25%
     c. 40%
     d. 50%

83. ICICI bank is quoting at Rs.1,100. CCRFI is 12 percent per annum and the continuously yield on share is 4 percent per annum. How much is the fair futures price of three-month contract?
     a. Rs.1,122
     b. Rs.1,133
     c. Rs.1,122.22
     d. Rs.1,133.33

84. Option Vega is 8.02. Current call and put premium is Rs.88.53 and Rs.253.67. How much would be the revised premium if there is 1 percent increase in volatility?
    a. Rs.80.51 and Rs.245.65
    b. Rs.96.55 and Rs.245.65
    c. Rs.80.51 and Rs.261.69
    d. Rs.96.55 and Rs.261.69

85. Mr. X purchased Nifty futures of Rs.2,00,000 on Jan 1. Lot size of Nifty = 10. Nifty spot on expiry was 20,800 whereas futures was 20,805. How much is the profit/loss?
    a. Profit of Rs.8,000
    b. Loss of Rs.8,000
    c. Profit of Rs.8,050
    d. Loss of Rs.8,050

86. Investment in R&D Activities is an example of which category of real option
    a. Abandonment option
    b. Timing option
    c. Growth option

87. The variance of spot and futures is 144% and 324%. The correlation co-efficient is 0.75. What is the hedge ratio?
    a. 0.66
    b. 0.50
    c. 0.33
    d. 1.125

88. ABC Limited has entered into an Electricity forward contract to buy 1 million units of power over the next three months at a specified price. What should be the settlement price in case the company opts for net settlement?
    a. Spot price on expiry date
    b. Spot price on entry date
    c. Average price of power over next three months

89. BSE sensex on 1st Jan 2022 (Anticipated on 1st Sep 2021) = 58,580; Dividend Yield of index = 6% per annum; 181 days treasury bill rate = 9% per annum; How much is the present value of sensex as on 1st Sep 2021?
    a. 58,580
    b. 58,000
    c. 59,160
    d. 60,000

90. What is the impact of increase in risk-free rate on premium of call and put option?
    a. Both call and put premium will decrease
    b. Call option premium will increase and put option premium will decrease
    c. Call option premium will decrease and put option premium will increase
    d. Both call and put premium will increase

91. On 15th September, the index closed at 1195, and December futures (last trading day December 15) were trading at 1225. The historical dividend yield on the index has been 3% per annum and the borrowing rate was 9.5% per annum. How much is the fair futures price assuming one year consist of 365 days?
    a. Rs.1,225
    b. Rs.1,195

    c.   Rs.1,214.37
    d.   Rs.1,223.30

92. How are weather derivatives different from traditional insurance contracts for protection against unforeseen weather events?
    a.   Both are similar
    b.   Insurance provides protection for extreme events whereas derivatives can be used to cover all types of risks including uncertainty in weather impacting cash flow
    c.   Derivatives protection for extreme events whereas insurance can be used to cover all types of risks including uncertainty in weather impacting cash flow

93. Fair futures price of Nifty = 20,000; Actual Futures price of Nifty = 19,800; Lot size = 100. How much is the value of one futures contract?
    a.   20,00,000
    b.   19,80,000

94. Put option Rho is -3.86 and current put premium is Rs.20. Risk-free interest rate has decreased by 1 percent. What would be the new put price post revision in risk-free rate?
    a.   Rs.20.00
    b.   Rs.23.86
    c.   Rs.16.14

95. Value of portfolio held = 20,20,000; Beta of portfolio = 2; BSE futures = 10,100; Lot size = 10; How many contracts should be bought/sold for perfect hedge?
    a.   Buy 40 contracts
    b.   Sell 40 contracts
    c.   Buy 20 contracts
    d.   Sell 20 contracts

96. The primary objective of weather derivatives is to hedge against
    a.   Volume risk
    b.   Price risk
    c.   Both volume risk and price risk
    d.   Neither volume risk nor price risk

97. Beta of share = 2 Times. Share has increased by 20 percent. How much would be the change in market?
    a.   Increase of 40 percent
    b.   Decrease of 40 percent
    c.   Increase of 10 percent
    d.   Decrease of 10 percent

98. Call option Delta = 0.60 Times; Option Gamma is 0.0010. How much would be the new Put Delta if the price of the underlying asset decline by Rs.1?
    a.   -0.3990 Times
    b.   0.6010 Times
    c.   0.5990 Times
    d.   -0.4010 Times

99. Spot price of shares = Rs.100; CCRFI = 12% per annum; Life of option = 3 Months. Value of call of an in-the-money option is Rs.10. How much is the value of an in-the-money put option?
    a.   Rs.10
    b.   Rs.12.96
    c.   Rs.7.04

        d. Rs.100

100. Beta of portfolio of investor = 2 Times. He is targeting 120% protection of his portfolio through Nifty Futures. How much is the target beta of the investor post protection?
        a. 4.40 Times
        b. 0 Time
        c. 2.4 Times
        d. -0.40 Times

101. A company enters into a commodity swap where it receives the price appreciation of gold and pays a fixed interest rate. What type of swap is this?
        a. Commodity for interest swap
        b. Amortizing swap
        c. Commodity-for-commodity swap
        d. Price-indexed swap

102. What is the impact of increase in exercise price on premium of call and put option?
        a. No impact on premium
        b. Call option premium will increase and put option premium will decrease
        c. Call option premium will decrease and put option premium will increase

103. Growth option (part of real option) falls under the category of _____
        a. American call option
        b. European call option
        c. American put option
        d. European put option

104. Investor has entered into a long position of Rs.100 lacs in Nifty futures. He also has a share portfolio which has Beta of 1.5 times. His share portfolio declined by 4.5 percent. How much would be the profit/loss only in Nifty futures?
        a. Loss of 4.5 lacs
        b. Profit of 4.5 lacs
        c. Loss of 3 lacs
        d. Profit of 3 lacs

105. Sale of shares of A Limited = Rs.2,00,000; Beta of A Limited = 1.5 times; The investor wants 50 percent hedge and hence wants to position to be taken in index futures?
        a. Purchase index futures of Rs.1,50,000
        b. Purchase index futures of Rs.1,00,000
        c. Sell index futures of Rs.1,50,000
        d. Sell index futures of Rs.1,00,000

106. Normal cost of capital is 10.5%.; Natural log (1.1050) = 0.0998; What will be the CCRFI rate of interest for normal cost of capital of 10.5%?
        a. Cannot be calculated with given information
        b. 10.5%
        c. 9.98%

107. Current value of call option of strike price Rs.600 is Rs.60.00. There is 60% probability of price reaching Rs.800 and 40% probability of price reaching Rs.500. Life of option = 6 months. How much is expected rate of return of option?
        a. 100%
        b. 0%

    c.   200%

    d.   50%

108._____ is the change in option price upon one day decrease in time to expiration
- a. Theta
- b. Rho
- c. Gamma
- d. Vega

109. Call option Theta is -3.45. Value of call option today is Rs.100. What would be the value of call option next day assuming other things remain constant?
- a. Rs.103.45
- b. Rs.100.00
- c. Rs.96.55

110. Value of portfolio held = 10,00,000; Beta of portfolio = 2 times; Size of one futures contract (index) = Rs.2,00,000; How many contracts to be bought/sold if we want to reduce Beta to 0.6 Times?
- a. Sell 7 Contracts
- b. Buy 10 contracts
- c. Sell 10 contracts
- d. Buy 7 contracts

111. Spot position of wheat = Rs.20; You have entered into futures contract to sell wheat at Rs.21. What will be the net realization if wheat price on maturity date is 25 in spot market and 25.10 in futures market?
- a. 25.10
- b. 21.00
- c. 20.90
- d. 21.10

112. A farmer uses a commodity futures contract to lock in the selling price of corn before the harvest. This is an example of:
- a. Income generation
- b. Convenience need
- c. Speculative trading
- d. Hedging

113. Value of portfolio = 20,00,000; Beta of portfolio =2 Times; How much fresh risk-free investment can be brought in if you want to reduce risk to 0.5 Times? Note: You are not planning to sell shares and bring in additional money
- a. Buy Risk-free investment of Rs.40,00,000
- b. Buy Risk-free investment of Rs.60,00,000
- c. Buy Risk-free investment of Rs.20,00,000

114. Abandonment option (part of real option) falls under the category of _____
- a. American call option
- b. European call option
- c. American put option
- d. European put option

115. The average daily absolute change in the value of the contract is Rs.8,000 and standard deviation of these changes is Rs.4,000. How much should the initial margin be?
- a. 12,000

        b.   8,000

        c.   20,000

        d.   16,000

116. Which of these conditions are not necessary for a product to be included under commodity derivatives?
   a. Product must be durable
   b. Product must be homogenous
   c. There should not be major price volatility in the commodity
   d. Supply should flow naturally to market

117. Dividend yield for different months is as under: Jan = 2%; Feb = 4%; Mar = 6%; Apr = 4%; May = 5%; June = 9%; July = 4%; Aug = 2%; Sep = 1%; Oct = 7%; Nov = 9%; Dec = 10%; What should be taken as dividend yield for valuing a 4-month futures which expired on Nov 30?
   a. 5.25%
   b. 8%
   c. 4.75%

118. Initial margin = 50,000; Maintenance margin = 40,000; Margin account reached balance of Rs.38,000. How much would be the margin replenishment needed?
   a. No replenishment needed
   b. Rs.2,000
   c. Rs.12,000

119. Initial margin = 50,000; Maintenance margin = 40,000; Margin account reached balance of Rs.43,000. How much would be the margin replenishment needed?
   a. No replenishment needed
   b. Rs.3,000
   c. Rs.7,000

120. You have sold one lot of Nifty at 10,000. Lot size = 100 units. Initial margin = 8% of contract value. Nifty has moved to 9,400 on next day. What will be the balance in margin account post profit/loss?
   a. 80,000
   b. 60,000
   c. 1,40,000
   d. 20,000

121. Initial margin = 50,000; Maintenance margin = 40,000; Margin balance post profit/loss = 70,000; Investor withdraws 60% of maximum allowed withdrawal. How much was the withdrawal?
   a. 18,000
   b. 12,000
   c. 20,000
   d. 30,000

122. Which type of option has a fixed payoff if it finishes "in the money" at expiration, regardless of the underlying asset's path?
   a. Asian option
   b. Lookback option
   c. Binary option
   d. Bermuda option

123. An investor expects two prices Rs.100 and Rs.80 for shares of TCS Limited. The exercise price of the call option is Rs.90. How much is the delta of the put option?

    a. 1 time
    b. 0.50 time
    c. -1 time
    d. 0 time

124. Exercise price = 1,000; CMP = 1,200. What is the intrinsic value of call option and Put option?
    a. 200 & 0
    b. 0 & 200
    c. 200 & - 200
    d. -200 & 200

125. Value of underlying asset has gone up. What will happen to an in-the -money call option?
    a. Value of call option will decrease
    b. Value of call option will increase
    c. No impact

126. Exercise price of option = 1,000 and 1,100; Premium of above option = 200 and 175; What will be the nature of above options?
    a. Call option
    b. Put option
    c. Cannot be said with given information

127. Holder carries _____ and writer carries _____?
    a. Limited risk and Limited risk
    b. Limited risk and unlimited risk
    c. Unlimited risk and limited risk
    d. Unlimited risk and unlimited risk

128. Chooser options allow the holder to:
    a. Choose between call and put options
    b. Choose the underlying asset
    c. Choose the option strike price

129. Exercise price of put option = 100; CMP of underlying asset = 80; CMP of put option = 45; How much is the time value of option?
    a. 20
    b. 25
    c. 45
    d. 0

130. CMP of underlying asset = 400; Exercise price of call option = 450; What is the status of call option?
    a. In the money
    b. At the money
    c. Out the money

131. Exercise price of call option = Rs.100; Premium paid/received = Rs.10; What will be the break-even price?
    a. 100
    b. 110
    c. 90

132. A call option that is in the money:
    a. has a value greater than its purchase price.

b. has an exercise price less than the market price of the asset
c. has an exercise price greater than the market price of the asset
d. has an exercise price equal to the market price of the asset

133. Other things equal, the fair futures price of an asset will be higher if the asset has
   a. Dividend payments
   b. Convenience Yield
   c. Storage costs

134. Which of the following will increase the value of a put option?
   a. An increase in volatility
   b. A decrease in exercise price
   c. An increase in current market price
   d. A dividend on the underlying asset

135. Which of the following statements about the potential profits and losses from selling a call is most accurate?
   a. Losses are limited to the strike price plus the premium
   b. Losses are theoretically unlimited
   c. Profits are theoretically unlimited

136. A stock is trading at Rs.18 per share. An investor believes that the stock will move either up or down. He buys a call option on the stock with an exercise price of Rs.20. He also buys two put options on the same stock each with an exercise price of Rs.25. The call option costs Rs.2 and the put options cost Rs.9 each. The stock falls to Rs.17 per share at the expiration date and the investor closes his entire position. The investor's net gain or loss is:
   a. Rs.4 (Loss)
   b. Rs.3 (Loss)
   c. Rs.4 (Gain)
   d. Rs.3 (Gain)

Answer:

1.	Counterparty risk
2.	Call option will be exercised and GPO will be Rs.40; Put option will not be exercised; Total GPO = Rs.40; Net premium paid = Rs.2; Final Profit = 40 - 2 = Rs.38
3.	(see table below)
4.	The market expects the asset's price to increase
5.	Initial margin = 8 % of contract value = 8% of (100 x 10,000) = 80,000 Profit/loss = 100 x (9800 - 10,000) = Loss of Rs.20,000 Margin balance post loss = 80,000 - 20,000 = Rs.60,000
6.	Standardized
7.	Mark-to-Market
8.	• Premium paid on call option = 3,000 [30 x 100] • Premium paid on put option = 500 [5 x 100] • Call option will not be exercised. Put option will be exercised and will have GPO of Rs.50 and we will receive Rs.5,000 • Net payoff = 5,000 - 3,500 = Rs.1,500
9.	Premium percentage has increased from 1% to 3.00%. Higher premium basically indicates **deterioration in credit quality** of underlying asset (Bonds of Company A)
10.	Basis = Spot price – Futures price = 40,000 – 42,000 = -2,000

For item 3:

Security	Beta	Weight	Product
ABC Limited	1.10	2,00,000	2,20,000
Sensex	1.00	-2,20,000	-2,20,000
Total	**0.00**	**2,00,000**	**0**

Value of one share $= \dfrac{2,00,000}{2,000} = 100$

11.	Negative and Positive
12.	An option with a strike price equal to the current market price of the underlying asset
13.	Pays out based on the performance of a group of underlying assets
14.	The holder of a put option has the right to sell to the writer of the option **Explanation:** The holder of a put option has the right to sell to the writer of the option. The writer of the put option has the obligation to buy, and the holder of the call option has the right, but not the obligation to buy.
15.	Fair futures price = Spot price x $(1 + r)^n$ = $1,000 \times (1 + 6\%)$ = Rs. 1,060 Arbitrage gain = Difference between AFP and FFP = 1,100 - 1,060 = Rs.40
16.	Maximum purchase price = 1,000 + 5% = 1,050; We can cap the maximum purchase price by taking a call option. Exercise price of call option would be Rs.1,050
17.	A European option can be exercised by its holder only at contract expiration
18.	Lookback option **Explanation:** Lookback options can offer significant payouts because they allow the holder to exercise at the asset's most favorable price during the option's life.
19.	Amount paid by Axis Bank = Default amount x (1 – Recovery rate) Amount paid by Axis Bank = 10,00,000 x (1 – 25%) = Rs.7,50,000
20.	Require weekly settlement of gains and losses **Explanation:** Futures contracts require daily settlement of gains and losses. The other statements are accurate
21.	American option and European option
22.	Put option will be exercised and hence gross payoff is negative 200; Premium received is Rs.45; Net payoff = Negative 200 + 45 = Negative 155
23.	Profit from the difference between two underlying assets' prices
24.	Risk-free rate
25.	<table><tr><th>Security</th><th>Delta</th><th>Weight</th><th>Product</th></tr><tr><td>Shares</td><td>1.00</td><td>1.00</td><td>1.00</td></tr><tr><td>Call option</td><td>0.3333</td><td>-3.00</td><td>-1.00</td></tr><tr><td>**Total**</td><td></td><td></td><td>**0.00**</td></tr></table> Risk-less hedge portfolio would mean overall delta of 0. We should buy 1 shares and sell 3 call options to create risk-less hedge portfolio
26.	When valuing options with early exercise features
27.	Futures is lower than spot and hence it is backwardation market Backwardation = Difference between FFP and Spot = 100
28.	Intrinsic value on maturity = Rs.20. Put option will have intrinsic value if the actual market price is lower than exercise price. Hence value on maturity date = Rs.100.00
29.	Delta
30.	Gamma
31.	Expected price of flat = 100 x (1 + 8%) – 2 lacs = 106 lacs <table><tr><th>Price</th><th>Probability</th><th>Product</th></tr><tr><td>110</td><td>P</td><td>110P</td></tr><tr><td>95</td><td>1-P</td><td>95-95P</td></tr><tr><td>**Total**</td><td></td><td>**110P + 95 – 95P = 106**</td></tr></table> $15P = 11; P = \dfrac{11}{15} = 0.7333$ (or)73.33%
32.	<table><tr><td>Amount payable [200 crores x 1%]</td><td>2 crores</td></tr><tr><td>Change in sensex</td><td>$\dfrac{21,000 - 20,000}{20,000} \times 100 = 5.00\%$</td></tr><tr><td>Amount receivable [20 crores x 5%]</td><td>10 crores</td></tr><tr><td>**Net receipt**</td><td>**8 crores**</td></tr></table>
33.	We will do monthly compounding as the monthly interest rates are given in question FFP = $100 \times (1.01)^3$ = Rs. 103.03
34.	Exercise price prevails would mean that market price on maturity would be equal to exercise price. The option will lapse and hence the likely value of call option on maturity is 0.
35.	Compound options provide the holder the right to buy or sell another option at a future date
36.	Buy spot and sell futures; Profit of Rs.10

37.	Rs.5,000 he expected payoff is calculated as the probability of finishing "in the money" multiplied by the fixed payout, minus the premium. Expected payoff = (0.70 x Rs.1,000) – Rs.200 = Rs.700 – Rs.200 = Rs.500. Total payoff = 500 x 10 options = Rs.5,000
38.	Premium paid = Rs.9; Premium received = Rs.10 (5 x 2); Net premium income = Rs.1 Option of EP of 55 and 60 will lapse. Option of EP of 65 will have GPO of Rs.3 and the same would be our income as we have purchased the same; Total profit = 1 + 3 = Rs.4
39.	Margin requirement on index futures will be less than margin requirement on stock futures. This is because index carries less risk than individual stocks and hence will have lower margin requirement
40.	Transfers the credit risk using credit default swaps (CDS)
41.	Let us assume P to be the probability of price increase by 20% and 1-P to be the probability of price fall by 20%. Risk-free rate of interest is 5% per annum CCRFI Expected price at end of month 6 = 50 x $e^{(0.05)(0.5)}$ = 50 x $e^{0.025}$ = 50 x 1.0253 = 51.27 <table><tr><th>Price</th><th>Probability</th><th>Product</th></tr><tr><td>60</td><td>P</td><td>60P</td></tr><tr><td>40</td><td>1-P</td><td>40-40P</td></tr><tr><td>Total</td><td></td><td>60P+40-40P=51.27</td></tr></table> $60P + 40 - 40P = 51.27; 20P = 11.27; P = \frac{11.27}{20} = 0.5635$ Hence probability of price raise is 56.35% and **probability of price fall is 43.65%**
42.	Benefit of patent will be earned over 15 years and hence annual cash inflow/dividend yield is 6.67% (1/15 years)
43.	We need to compare strike price with average closing price in case of an Asian option. The average price is Rs.51.67. Current market price is higher than strike price and hence option will be exercised and the gross pay-off to option buyer is Rs.1.67
44.	Notional principal of company X = 200 crores/125 = Rs.1.6 crores Settlement amount = 1.6 crores – 25% = Rs.1.2 crores
45.	PV of dividend income $= \frac{1}{e^{0.01}} = 0.99$ Adjusted spot price = Spot price - PV of dividend income = 100 - 0.99 = Rs.99.01 Fair futures price $=$ Adjusted spot price x e^{rt} $=$ 99.01 x $e^{0.03}$ = 99.01 x 1.03045 = 102.02
46.	Forward price $=$ Adjusted spot price x $(1 + r)^n$ 206 = Adjusted spot price x (1+3%) Adjusted spot price = Rs.200 Adjusted spot price = Spot price - PV of dividend income 200 = Spot price - 2; Spot price = Rs.202
47.	Buyer of the CDS
48.	Initial outflow (investment) = 10,000 + 1,000 = Rs.11,000 Net Profit = 5,000 – entry commission (1,000) – exit commission (1,000) = 3,000 Rate of return $= \frac{3,000}{11,000}$ x 100 = 27.27%
49.	Right to receive the highest (for call) or lowest (for put) asset price during the option's life
50.	Adjusted spot price = Spot price + PV of storage costs PV of storage costs $= \frac{5}{1 + 3\%} =$ Rs.4.85 Adjusted spot price = 800 + 4.85 = Rs.804.85 Fair futures price = 804.85 x (1+3%) = Rs.829
51.	Binomial model
52.	Generate profits from price discrepancies in underlying assets
53.	Under a lookback option the option holder can choose the most favorable price for deciding on exercise. Hence the exercise price of Rs.80 can be compared with most favorable price of Rs.85 (highest price) and the option holder will have a pay-off of Rs.5.00
54.	0 and 1
55.	Ensure that a hedger does not become a speculator
56.	Convenience yield = FFP as per formula - FFP as per question FFP as per formula = Spot price + Cost to carry = 800 + 20 = 820

	Convenience yield = 820 - 810 = Rs.10
57.	Since trader has planned to sell after 3 months, now it implies, he is in Long Position in Cash or Spot Market.
58.	Expected share price = PV x e^{rt} Expected share price = $100 \times e^{(0.10)(0.50)} = 100 \times e^{0.05} = 100 \times 1.051271 = Rs.105.13$ Let us assume p to be the probability of price reaching Rs.120 and 1-p to be the probability of price reaching Rs.90 <table><tr><td>Price</td><td>Probability</td><td>Product</td></tr><tr><td>120</td><td>P</td><td>120P</td></tr><tr><td>90</td><td>1-P</td><td>90-90P</td></tr><tr><td>Total</td><td></td><td>90-30P=105.13</td></tr></table> $90 - 30P = 105.13; -30P = -15.13; P = \dfrac{15.13}{30.00} = 0.5043$ (or) 50.43%
59.	The value of both call and put option decreases **Explanation:** As the expiration date approaches, the time value of the option decreases. Time value is the premium that an option buyer pays for the possibility of the option moving in-the-money before expiration. As there is less time for the option to move in-the-money, the value of both call and put options decreases.
60.	$FFP = $ Spot price $\times [1 + (r - y)^t]$ $FFP = 1,000 \times (1 + (6\% - 3\%))^1 = 1,030$ **Note:** Dividend yield is 4 percent per annum. Proportionate yield for next 6 months is 3 percent as 75 percent of stock would pay dividend in next 6 months
61.	American call option
62.	The credit spread of the reference asset widens **Explanation:** The protection buyer benefits when the credit spread of the reference asset widens, indicating a higher probability of default, leading to a higher payout in case of default.
63.	Futures contracts are standardized, while forward contracts are not.
64.	Positive relationship **Explanation:** Higher the risk attached to Bonds or loans, higher will be premium or cost of CDS
65.	$N(d1) \times e^{-yt} = 0.7069 \times e^{-0.03 \times \left(\frac{2}{12}\right)} = 0.7034$ Value of call $= (S_0 \times N(d1) \times e^{-yt}) - (PV_{EP} \times N(d2))$ Value of call $= (930 \times 0.7034) - (888.08 \times 0.6783) = Rs.51.78$
66.	No of shares to be sold = 5,000 x 30% = 1,500 shares Shares held post sale = 5,000 – 1,500 = 3,500 shares
67.	<table><tr><td>Particulars</td><td>Amount</td></tr><tr><td>Profit in ABC Limited [2,00,000 x 5%]</td><td>10,000</td></tr><tr><td>Profit in Nifty futures [12,000 – 10,000]</td><td>2,000</td></tr><tr><td>Position in nifty futures [2,000/-2%]</td><td>-1,00,000</td></tr></table> **Beta computation:** <table><tr><td>Security</td><td>Beta</td><td>Weight</td><td>Product</td></tr><tr><td>ABC Limited</td><td>0.50</td><td>2,00,000</td><td>1,00,00</td></tr><tr><td>Nifty Futures</td><td>1.00</td><td>-1,00,00</td><td>-1,00,00</td></tr><tr><td>Total</td><td>0</td><td>2,00,000</td><td>0</td></tr></table> • Nifty of ABC Limited = 0.50 Times
68.	If you are hedging a portfolio using the Delta-hedge technique then you will want to keep **gamma as small as possible**, the smaller it is the less often you will have to adjust the hedge to maintain a delta neutral position
69.	CDS spread has widened and hence the same indicates deterioration in credit quality. Deterioration in credit quality will lead to profit for the protection buyer. Profit of protection buyer = 10,00,000 x 2% x 10 years = Rs.2,00,000
70.	The value of long forward contract increases (Buyer will make profit)
71.	**Original futures price:** PV of dividend $= \dfrac{4}{1.08} = 3.70$ Adjusted spot price = 125 – 3.70 = 121.30 Fair futures price = 121.30 x 1.08 = Rs. 131 (or)Rs. 2,62,000 per contract

	Revised futures price: Revised spot price $= 125 - 6\% =$ Rs. 117.50 Adjusted spot price $= 117.50 - 3.70 = 113.80$ Fair futures price $= 113.80 \times 1.08 =$ Rs. 122.90 (or) Rs. 2,45,800 per contract **Profit/loss:** Investor originally sold futures for Rs.2,62,000. Now the opposite position (purchase) will be at Rs.2,45,800. Hence profit $= 2,62,000 - 2,45,800 =$ Rs.16,200
72.	Specify risk limits and ensure separation of front, middle, and back offices
73.	Any commitment to disinvest upon the action of another party
74.	Break-even price is where premium is equal to gross payoff; Net premium received $= 25 - 10 = 15$. Hence at break-even gross payoff should be negative Rs.15. This would mean we would lose money on option written and don't earn anything on option bought We will lose Rs.15 on Rs.80 option if the actual market price is Rs.95. At Rs.95, EP of Rs.100 option would not get exercised and hence we will lose Rs.15 at GPO level
75.	**Spot market:** Profit in spot market $= 10,00,000 \times 10\% =$ Rs.1,00,000 **Futures Market:** Short position in futures market $= 10,00,000 \times 2 = 20,00,000$ Loss in futures market $= 20,00,000 \times 8\% = 1,60,000$ **Overall Position:** Overall loss $= 1,00,000 - 1,60,000 =$ Rs.60,000 (Loss)
76.	Basis risk
77.	Value of call $= \left(S_0 \times N(d1)\right) - \left(PV_{EP} \times N(d2)\right) = (415 \times 0.6926) - (395.03 \times 0.6529) =$ Rs. 29.51
78.	Share + Put = Call + PV of EP Adjusted share price $=$ Share price – PV of dividend $= 100 - \dfrac{2}{e^{0.02}} = 100 - 1.96 = 98.04$ $98.04 + 10 =$ Call $+ \dfrac{100}{e^{0.03}}$; $108.04 =$ Call $+ 97.04$; Call $= 11.00$
79.	Swap electricity prices between different delivery locations
80.	CDS spread = Probability of default x (1 – Recovery rate) CDS spread $= 2\% \times (1 - 20\%) = 1.60\%$
81.	Risk Reduction **Explanation:** Real options provide flexibility and allow decision-makers to adapt to changing market conditions, reducing the risk associated with long-term investments.
82.	Fair Futures Price = Spot price x (1 + r) $24,000 = 20,000 \times (1 + r)$; $r = 20\%$ per 6 months (or) 40% per year Actual risk-free is Rs.20,000. However, the implied risk-free rate is more than actual risk-free rate due to arbitrage gain. Investor will earn arbitrage gain of Rs.1,000 (Difference between FFP and AFP) and the same would translate into gain of 5% per half year (or) 10% per year. Hence implied risk-free rate $= 40\% + 10\% = 50\%$ per annum
83.	Fair Futures Price = Spot Price x $e^{(r-y)t} = 1,100 \times e^{(0.12-0.04)(0.25)}$ Fair Futures Price $= 1,100 \times e^{0.02} = 1,100 \times 1.0202$ **= Rs.1,122.22**
84.	Volatility has increased and hence both call and put premium will increase. Option Vega is 8.02 and hence both call and put premium will increase New call premium = Rs.88.53 + 8.02 = Rs.96.55 New put premium = Rs.253.67 + 8.02 = Rs.261.69
85.	Profit/loss will be computed using futures price on expiry date 	Particulars	Calculation	Amount	 |---|---|---| 	Purchase price	2,00,000/10	20,000	 	Opposite cancellation rate (SP)		20,805	 	Profit	10 x (20,805 – 20,000)	8,050	
86.	Growth option **Explanation:** Investment in R&D activities will provide the flexibility to make higher investment depending on the success of R&D.
87.	Hedge ratio is also known as Beta.

	$\text{Beta} = \dfrac{\text{SD of spot price}}{\text{SD of future price}} \text{ x Correlation co} - \text{efficient}$ $\text{Beta} = \left(\dfrac{12}{18}\right) \text{ x } 0.75 = 0.50 \text{ Times}$
88.	Average price of power over next three months **Explanation:** The settlement price ST is usually calculated based on the average price of electricity over the delivery period at the maturity day. This is because the underlying electricity is a different commodity at different times.
89.	<table><tr><td>Present value of sensex as on 1st Sep 2021 (Spot price)</td><td>??</td></tr><tr><td>BSE sensex on 1st Jan 2022 (anticipated on 1st Sep 2021) [Futures price]</td><td>58,580</td></tr><tr><td>Time period</td><td>4 months</td></tr><tr><td>Risk-free rate</td><td>9% p.a. (or) 3% per 4M</td></tr><tr><td>Dividend Yield</td><td>6% p.a. (or) 2% per 4M</td></tr></table>Fair Futures Price = Spot Price x $(1 + (r - y))^t$ $\mathbf{58,580 = \text{Spot price x } (1 + (0.03 - 0.02))^1}$ $\mathbf{\text{Spot price} = \dfrac{58,580}{1.01} = 58,000}$
90.	Call option premium will increase and put option premium will decrease **Explanation:** Increase in risk-free rate will lead to an expectation of higher price on maturity date. This is favourable for call option and adverse for put option.
91.	No of days = 15 days of Sep + 31 days + 30 days + 15 days = 91 days Rate of interest = 9.5% per year (or) 2.3685% per 91 days Dividend Yield = 3% per year (or) 0.7479% per 91 days FFP = Spot Price x $(1 + (r - y))$ = 1195x $(1 + (2.3685\% - 0.7479\%))$ = **1,214.37**
92.	Insurance provides protection for extreme events whereas derivatives can be used to cover all types of risks including uncertainty in weather impacting cash flow
93.	Value of one contract = Actual Futures price x Lot size Value of one contract = 19,800 x 100 = Rs.19,80,000 **Note:** We will use fair futures price as actual futures price if there is no information on AFP in question
94.	Put Rho is -3.86. This would mean that put premium will decrease if there is an increase in interest rate and vice versa. Risk-free interest rate has declined by 1 percent and hence put premium will increase. New Put premium = 20 + 3.86 = Rs.23.86
95.	We need to sell futures to hedge as we have a long position in spot market No of contracts to be sold $= \dfrac{\text{Exposure value x Beta}}{\text{Value of one contract}} = \dfrac{20,20,000 \text{ x } 2}{10,100 \text{ x } 10} = 40 \text{ contracts}$
96.	Volume risk **Explanation:** The primary objective of weather derivatives is to hedge volume risk, rather than price risk, that results from a change in the demand for goods due to a change in weather
97.	Change in share = Change in market x Beta 20 percent = Change in market x 2 Change in market $= \dfrac{20}{2} = 10 \text{ percent (increase)}$
98.	Original Call Delta = 0.60 Times; Option Gamma is 0.0010 and this would mean that call delta will increase by 0.0010 for Rs.1 increase in share price and will decline by 0.0010 for Rs.1 decline in share price. New call delta with Rs.1 decrease in price = 0.60 Times – 0.0010 Time = 0.5990 Times Put delta = Call delta – 1 = 0.5990 – 1 = -0.401 Times
99.	Share + Put = Call + PV of EP $100 + \text{Put} = 10 + \dfrac{100}{e^{0.03}}$; $100 + \text{Put} = 10 + 97.04$; Put = 7.04
100.	Target Beta = Existing Beta – Protection % = 2 – (120% of 2) = -0.40 Times
101.	Commodity for interest swap
102.	Call option premium will decrease and put option premium will increase **Explanation:** Higher exercise price is adverse for a call option and favourable for put option
103.	European call option

104.	Share has beta of 1.5 times and has declined by 4.5 percent. Hence market would have fallen by 3 percent. We are holding Nifty futures of 100 lacs and Nifty has fallen by 3 percent. Hence loss in Nifty futures is Rs.3 lacs
105.	We have sold in spot market and hence we should purchase in futures market. Amount of futures to be purchased = Exposure value x Beta x Protection % **Amount of futures to be purchased = 2, 00, 000 x 1. 50 x 50% = Rs. 1, 50, 000**
106.	Natural log can help in converting the normal rate to CCRFI. In this case Natural log (1.105) is 0.0998. Hence, we can say that normal rate of 10.5% is equivalent of CCRFI 9.98%
107.	Expected value on maturity = [200 x 60%] + [0 x 40%] = Rs. 120.00 Rate of return $= \dfrac{120-60}{60} x \dfrac{12}{6} x\ 100 = 200.00\%$
108.	Theta
109.	Call theta of -3.45 would mean decline in call option price by 3.45 for one day decrease in time to expiration. In this case other things have remained constant and hence the new call option price is Rs.96.55 (100 – 3.45)

110.	Security	Beta	Weight	Product
	Portfolio	2.00	10,00,000	20,00,000
	Index futures	1.00	-14,00,000	-14,00,000
	Total	**0.60**	**10,00,000**	**6,00,000**

No of contracts to be sold $= \dfrac{14,00,000}{2,00,000} =\ 7$ contracts

111.	Date	Position	Action	Reference Date	Rate
	Day 0	Original Position	Sell	Maturity	21.00
	Maturity	Opposite Position	Buy	Maturity	-25.10
	Loss in futures				**-4.10**

Net realization = Spot realization (25) - Loss of Rs.4.10 = 20.90

112.	Hedging

113.	Security	Beta	Weight	Product
	Portfolio	2.00	20,00,000	40,00,000
	Risk-free investment	0.00	60,00,000	0
	Total	**0.50**	**80,00,000**	**40,00,000**

Hence the investor needs to have a portfolio value of Rs.80,00,000 to reduce beta to 0.5 Times. This will be possible by having share portfolio of Rs.20,00,000 and balance risk-free investment of Rs.60,00,000

114.	American Put option
115.	Initial margin = Daily absolute change + (3 x Standard Deviation) Initial Margin = 8,000 + (3 x 4,000) = Rs.20,000
116.	There should not be major volatility in the commodity **Explanation:** The commodity needs to have high volatility and then only buyer/seller would want to hedge the same. If the commodity is not volatile then there will be no need for commodity derivatives
117.	Dividend yield $=$ Average dividend yield of 4 months ending Nov 30 $= \dfrac{2+1+7+9}{4} =\ 4.75\%$
118.	Margin account has fallen below the maintenance margin and hence we are required to replenish this back to the level of initial margin (50,000). Replenishment needed = 50,000 - 38,000 = 12,000
119.	Margin balance has not gone below maintenance margin and hence no replenishment is needed
120.	Initial margin = 8% of 10,000 x 100 = 80,000 Profit/loss = 100 x (10,000 - 9,400) = Rs.60,000 Value in margin account post profit = 80,000 + 60,000 = 1,40,000
121.	Maximum allowed withdrawal = Margin balance - Initial margin = 70,000 - 50,000 = Rs.20,000 Amount withdrawn = 60% of 20,000 = Rs.12,000
122.	Binary option
123.	Delta of call option $= \dfrac{\text{Spread in stock price}}{\text{Spread in IV}} = \dfrac{100-80}{10-0} = 0.50$ Times Delta of Put option = Call delta – 1 = 0.50 – 1 = -0.50 Times

124.	Call option is exercised when actual market price is higher than exercise price. In the given situation it would be exercised and has intrinsic value of Rs.200. Put option will not be exercised and hence intrinsic value of 0
125.	Value of call option will increase with the increase in value of underlying asset
126.	Premium for call option will reduce with the increase in exercise price (purchase price is going up). This is because increased exercised price would reduce the probability of exercising call option. In the given question, premium reduces with increase in exercise price and hence the same is a call option
127.	Limited risk and unlimited risk
128.	Choose between call and put options
129.	Time value = Option price - Intrinsic value = 45 - 20 = 25
130.	OTM options are those which won't be exercised. Exercise price of call option is Rs.450 whereas CMP is Rs.400. Hence this option won't be exercised currently and so this is an out the money options
131.	Call option will get exercised if actual price is higher than exercise price. Break-even will happen when Gross pay-off is equal to premium and hence GPO should be Rs.10. GPO would be Rs.10 if the actual market price on expiry date is Rs.110
132.	Has an exercise price less than the market price of the asset
133.	Storage costs **Explanation:** Costs of holding an asset increase its fair futures price. Benefits from holding the asset, such as dividends or convenience yield, decrease its fair futures price.
134.	An increase in Volatility
135.	Losses are theoretically unlimited
136.	Premium paid = 2 + (9 x 2) = Rs.20. Call option will not be exercised and put option will be exercised on maturity date. Gross payoff from put option will be Rs.16 (8 x 2) and hence the investor will have a net loss of Rs.4.00

Chapter 10 – Foreign Exchange Exposure and Risk Management

1. Investment on day 0 = USD 100; Interest earned = USD 10; Value on day 365 = USD 105; USD has depreciated by 5 percent. What is the return in terms of home currency?
   a. 15%
   b. 10%
   c. 20.75%
   d. 9.25%

2. Spot rate INR/USD = 65.20/80. What will be BID rate for USD/INR?
   a. 0.015337
   b. 0.015198
   c. 0.0125

3. Spot rate is USD 1.5606 - 950/GBP. What will be the Ask rate for USD/GBP?
   a. 1.9500
   b. 1.5695
   c. 1.5950
   d. 950

4. Spot rate is the rate paid for delivery within _____ business days after the day the transaction takes place
   a. One
   b. Two
   c. Three
   d. Same

5. USD/GBP rate = 1.5606 – 50; USD/EURO rate = 1.2456 – 600; What will be the bid Euro/GBP rate?
   a. 1.2386
   b. 1.9439
   c. 1.9719
   d. 0.7959

6. A bank sold HKD 10,00,000 at the rate of Rs.6.5/HKD. He closes the position on the same day when rates are: INR/USD = 62 – 65; HKD/USD = 7.80 – 8; What will be the profit/loss in this transaction?
   a. Loss of Rs.18,33,333
   b. Loss of Rs.12,50,000
   c. Loss of Rs.13,68,020
   d. None of the above

7. CFO of a company has surplus funds and he can invest the same either in index fund of Japan or USA treasury bills. The maturity amount in INR would remain same for both investments. Where should the investment be done?
   a. Invest in Japan
   b. Invest in USA
   c. Indifferent between investment in Japan and USA
   d. 50% in Japan and 50% in USA

8. What is the relationship between spread of spot rate and spread of forward rate?
   a. Spread of forward rate is always higher than spread of spot rate
   b. Spread of forward rate is always same as spread of spot rate
   c. Spread of forward rate is always lower than spread of spot rate
   d. Spread of forward rate may be same/higher/lower than spread of spot rate

9. You have sold 10,00,000 USD at the rate of Rs.65/USD. You plan to cover the same and the rates are as under: JPY/INR = 2.05 – 10; JPY/USD = 130.50 - 132.50; How much is the profit/loss?
    a. Profit of Rs.13.41 lacs
    b. Profit of Rs.28.57 lacs
    c. Profit of Rs.19.05 lacs
    d. Profit of Rs.3.66 lacs

10. ICL an Indian MNC is executing a plant in Sri Lanka. It has raised Rs. 400 billion. 60% of the amount will be required after six months' time. ICL is looking an opportunity to invest this amount on 1st April,2020 for a period of six months. How much is the investible amount as of now?
    a. Rs.400 billion
    b. Rs.160 billion
    c. Rs.240 billion
    d. Rs.200 billion

11. Spot INR/USD = 65 - 66; Spot INR/GBP = 80 - 81. Exchange margin is 0.5% for BID rate and 1% for Ask Rate. What will be Bid and Ask rate for USD/GBP?
    a. 1.2061 - 1.2587
    b. 1.2109 - 1.2399
    c. 1.2133 - 1.2399
    d. 1.2109 - 1.2524

12. Which of the following is not a technique for exchange rate forecasting?
    a. Technical Forecasting
    b. Fundamental Forecasting
    c. Market-based Forecasting
    d. Scientific Forecasting

13. USD/INR rate = 70.85/73; We plan to buy 1,000 USD. Exchange margin is 0.5%.; How much will be the INR outflow?
    a. INR 73,365
    b. INR 71,084
    c. INR 14.07
    d. INR 13.63

14. If a country experiences a sudden increase in inflation while its trading partners maintain stable inflation rates, what effect is this likely to have on the country's currency value, according to the Purchasing Power Parity Theory?
    a. The currency will appreciate.
    b. The currency will depreciate.
    c. The currency's value will remain unchanged.
    d. The theory does not offer any prediction about currency value changes.

15. XYZ an Indian firm, will need to pay JAPANESE YEN (JY) 5, 00,000 on 30th June. Spot JPY/INR is 1.9516/1.9711. The prices for forex currency option on purchase are as follows:

    Strike Price   =   JY 2.125
    Call option (June)   =   JY 0.047
    Put option (June)   =   JY 0.098

    How much is the premium to be paid on hedging the exposure through option route?
    a. INR 23,059
    b. INR 11,815
    c. INR 11,699
    d. JPY 11,699

16. The spot exchange rate is USD 2 per GBP. USD has appreciated by 10 percent. What will be the forward rate?
    a. USD 2.2 per GBP
    b. USD 1.8 per GBP
    c. USD 1.82 per GBP

17. Spot rate is Rs.50/USD. 3-month forward rate is Rs.52/USD. How much is the appreciation/depreciation of INR?
    a. Appreciation of 4%
    b. Appreciation of 16%
    c. Depreciation of 3.85%
    d. Depreciation of 15.40%

18. Swap points for 1 month is 100/150; Swap points for 3 months is 300/400; How much will be the swap points for 2.5 months?
    a. 200/275
    b. 250/337.50
    c. 150/212.50
    d. 250/350

19. India Imports co., purchased USD 100,000 worth of machines from a firm in New York, USA. The value of the rupee in terms of the Dollar has been decreasing. The firm in New York offers 2/10, net 90 terms. The spot rate for the USD is Rs. 55; the 90 days forward rate is Rs. 56. How much is time value of money component (discount for prepayment) and protection from currency fluctuation if the company decides to make payment today?
    a. Rs.1,10,000 and Rs.1,00,000
    b. Rs.1,12,000 and Rs.98,000
    c. Rs.1,00,000 and Rs.1,10,000

20. Spot rate for INR/USD= 66.50/90. Swap points = 140/120. What will be forward ask rate for INR/USD?
    a. 65.70
    b. 210
    c. 91.20
    d. 68.10

21. A multinational company based in the United States has entered into a contract to purchase raw materials from a supplier in Japan. The payment is due in Japanese Yen (JPY) three months from now. What type of foreign exchange risk exposure is the company facing?
    a. Transaction Exposure
    b. Translation Exposure
    c. Economic Exposure
    d. Contingent Exposure

22. Spot rate is Rs.50/USD. 6-month interest rate in India = 12%; 6-month interest rate in USA = 4%. What will be the forward rate after 6 months?
    a. Rs.46.43/USD
    b. Rs.48.11/USD
    c. Rs.53.85/USD
    d. Rs.51.96/USD

23. On 1st October, 2020 Mr. Guru, an exporter, enters into a forward contract with the Bank to sell USD 1,00,000 on 31st December 2020 at INR/USD 75.40. However, at the request of the importer, Mr. Guru received the amount on 30th November, 2020. Mr. Guru requested the bank take delivery of the remittance on 30th November, 2020 i.e. before due date. The inter-bank rate on 30th November 2020 was as follows:

- Spot INR/USD 75.22-75.27
- One Month Premium 10/15

    Assume 365 days in a year.
    How much would be the interest charged/paid by the bank for early remittance?
    a. Rs.197 (customer will pay bank)
    b. Rs.197 (bank will pay customer)
    c. Rs.275 (Customer will pay bank)
    d. Rs.275 (Bank will pay customer)
    e.

24. Foreign Exchange Dealers/Traders use a network of communication to carry out their business transactions called _____
    a. VISA
    b. SMS
    c. SWIFT
    d. MASTER

25. USD return = 6.00%; Appreciation of INR = 5%. How much is the INR return?
    a. 11.00%
    b. 1.00%
    c. 11.30%
    d. 0.95%

26. Spot rate = Rs.60 per GBP. Inflation in India = 10% per annum; Inflation in UK = 3% per half year. What will be the forward rate for 3 months?
    a. Rs.60 per GBP
    b. Rs.64.08 per GBP
    c. Rs.60.59 per GBP
    d. Rs.61.17 per GBP

27. A US-based multinational company owns a subsidiary in the Eurozone. The financial statements of the subsidiary are to be considered for consolidation purposes. What type of foreign exchange risk exposure is the company having?
    a. Transaction Exposure
    b. Translation Exposure
    c. Economic Exposure
    d. Accounting Exposure

28. Government of India has put restrictions on import of Goods from China. This will lead to _____ over long run
    a. Appreciation of INR
    b. Depreciation of INR
    c. No impact

29. A Ltd. of U.K. has imported some chemical worth of USD 3,64,897 from one of the U.S. suppliers. The amount is payable in six months time. Currency options are available under which one option contract is for GBP 12,500. The option premium for GBP at a strike price of USD

1.70/GBP is USD 0.037 (call option) and USD 0.096 (put option) for 6 months period. Which type of option should we take for hedging?
- a. Call option
- b. Put option

30. T & L Ltd has submitted its bid along with bid bond guarantee of its bank for Green-house gas construction project in Australia with expected cash flows spread over next 3 years. Though its pricing is very competitive, it is not sure of securing it due to other factors. But if secured, it has a huge exchange risk in the invoicing currency viz.: AUD. It can opt for the following derivative product to protect itself.
- a. Forward contract
- b. Futures contract
- c. Option contract
- d. Swaps

31. Not hedging all foreign exchange exposures is an example of _____
- a. Low risk reasonable reward strategy
- b. Low risk low reward strategy
- c. High risk low reward strategy
- d. High risk high reward strategy

32. Spot rate is 1.40 USD/GBP. Interest rate in USA = 5% per annum. Interest rate in London = 10% per annum. What will be the forward rate of year 2?
- a. 1.5273 USD/GBP
- b. 1.2833 USD/GBP
- c. 1.2756 USD/GBP
- d. 1.5365 USD/GBP

33. You have following quotes from Bank A and Bank B:

	Bank A	Bank B
SPOT	CHF/USD 1.4650/55	CHF/USD 1.4653/60
SPOT	USD/GBP 1.7645/60	USD/GBP 1.7640/50

How much minimum CHF amount you have to pay for 1 Million GBP spot?
- a. CHF 25,88,073
- b. CHF 25,87,490
- c. CHF 25,86,608
- d. CHF 25,88,956

34. INR/USD in bank A = 65.40 - 67.40; INR/USD in bank B = 68.40 - 70.00; How much will be the arbitrage gain if the investor can buy/sell 1,00,000 USD?
- a. 4,60,000
- b. 1,00,000
- c. 3,00,000
- d. 2,60,000

35. _____ and _____ are two major factors impacting foreign exchange rate
- a. Export and import
- b. Investment and Financing
- c. Demand and Supply
- d. Interest rate and Inflation rate

36. Spot rate = INR 40/USD; 6-month borrowing rate in India = 10%; 6-month borrowing rate in USA = 4%; Forward rate = INR 41.50/USD; What will be the arbitrage strategy?
- a. Borrow in India and invest in USA

b. Borrow in USA and invest in India
c. Arbitrage is not possible

37. USD is likely to depreciate by 2.50% against DM (German Currency). Which of the following information is true about interest rates?
    a. Interest rates in USA and Germany is same
    b. Interest rates in Germany is 2.50% more than that of USA
    c. Interest rates in Germany is 2.50% lower than that of USA
    d. We cannot conclude about interest rates based on the given information

38. INR/USD = 48.30; INR/GBP = 77.52; USD/GBP = 1.6231; How much arbitrage gain be made if investor has 1,00,000 USD?
    a. No arbitrage gain
    b. Gain of 1,129.70
    c. Gain of 1,054.70
    d. Gain of 2,154.34
    e. None of the above

39. SWIFT is a _____
    a. Transaction settlement system
    b. Standardized communication system
    c. Transaction execution system

40. An Indian firm is exporting goods to USA. What should be the billing currency if the firm opts for currency invoicing technique to hedge transaction?
    a. INR
    b. USD
    c. GBP
    d. EURO

41. How can expectations affect the exchange rate of a currency?
    a. Speculators can have a substantial impact on exchange rate through speculations.
    b. The current spot/forward rates are often used to develop forecasts.
    c. A combination of forecasting techniques is used to develop forecasts.
    d. Historical data is used to predict future values

42. What is the major disadvantage of currency invoicing technique?
    a. Currency invoicing is costly
    b. Insistence on currency invoicing can give repeat business
    c. Insistence on currency invoicing can lead to loss of business

43. Spot exchange rate EUR 0.8006 per USD. Forward discount on EURO is 4 percent per year. What is the expected 6-month forward rate of EUR/USD?
    a. EUR 0.8166 per USD
    b. EUR 0.8326 per USD
    c. EUR 0.8169 per USD
    d. EUR 0.8339 per USD

44. Selective hedging of all foreign exchange exposures is an example of _____
    a. Low risk reasonable reward strategy
    b. Low risk low reward strategy
    c. High risk low reward strategy
    d. High risk high reward strategy

45. Deficit in current account will lead to _____ while negative net inflow in capital account leads to _____
    a. Appreciation of Home currency and Appreciation of home currency
    b. Appreciation of Home currency and Depreciation of home currency
    c. Depreciation of Home currency and Appreciation of home currency
    d. Depreciation of Home currency and Depreciation of home currency

46. The spot rate for INR/AUD is 29.45 – 29.90 and the three-month forward rate is 29.36 – 29.80. How much is the appreciation/depreciation of INR bid rate?
    a. Appreciation of 1.23%
    b. Depreciation of 1.22%
    c. Appreciation of 0.31%
    d. Depreciation of 0.31%

47. XYZ Ltd. is an export-oriented business house based in Mumbai. The Company invoices in customers' currency. Its receipt of US $ 1,00,000 is due on September 1,2009. Contract size of currency futures is Rs.4,72,000 and September futures rate is USD0.02118 per INR. On September 1, 2009 the spot rate US$/Re. is 0.02133 and currency future rate is 0.02134. How much would be the futures profit/loss on maturity date?
    a. INR 755.20 (Profit)
    b. USD 755.20 (Profit)
    c. INR 755.20 (Loss)
    d. USD 755.20 (Loss)

48. INR is going to depreciate 5 percent against USD. INR is going to depreciate 3 percent against GBP. Counterparty is willing to have the billing either in USD or GBP. What should be the billing currency in case of Indian importer?
    a. GBP
    b. USD
    c. INR

49. An importer booked a forward contract with his bank on 10th April for USD 2,00,000 due on 10th June @ Rs. 64.4000. The bank covered its position in the market at Rs.64.2800. On June 10 the customer did not appear when spot rate was INR 63.8000/8200 per USD and the forward rate for next available contract is INR 63.9200/9500 per USD. Interest rate is 12.00% per annum. Compute swap loss and interest payable to bank if the customer appeared on June 13?
    a. Rs.24,000 and Rs.30
    b. Rs.20,000 and Rs.95
    c. Rs.30,000 and Rs.95
    d. Rs.56,000 and Rs.30

50. The following is the interest rates at which ABC Limited and DEF Limited can borrow in two currencies:

Company	USD	AUD
ABC Limited	5%	12.6%
DEF Limited	7%	13%

ABC Limited wants to borrow in AUD and DEF wants to borrow in USD. A financial institution has offered to arrange for a currency swap with dealers margin of 0.2% and has agreed to bear exchange risk. How much would be the effective borrowing rate of ABC Limited through IRS?
    a. AUD 12.60%
    b. AUD 11.90%
    c. USD 5.00%
    d. USD 4.30%

51. A company has payable of YEN 10,00,000 after three months. YEN is likely to appreciate by 5% against INR over next three months. The company is thinking whether to pay this money today or after three months. It is having cash deficit and borrowing rate in bank is 10 percent per annum. Should the company make the payment now or wait for three months?
    a. Make payment today
    b. Make payment after three months
    c. Indifferent between two choices

52. In case of cash surplus appreciation percentage is to be compared with _____ and in case of cash deficit appreciation percentage is to be compared with _____ for deciding lead/lag?
    a. Investment rate and Investment rate
    b. Borrowing rate and Investment rate
    c. Investment rate and borrowing rate
    d. Borrowing rate and borrowing rate

53. The company has payable of USD 10,00,000 after three months. USD is expected to depreciate against INR. Should the company lead or lag the payment?
    a. Lead the payment
    b. Lag the payment

54. _____ refers to the process by which receivables and payable dues are set-off against each other
    a. Currency invoicing
    b. Leading and Lagging
    c. Netting

55. A _____ is a virtual mode equivalent to physical mode of transfer of cash that authenticates and routes payment details in an extremely secure environment
    a. Cash transfer
    b. Cheque settlement
    c. Payment Gateway

56. Combination of two fixed floating currency swaps to fixed to fixed currency swap is called?
    a. Vanilla swap
    b. Circus swap
    c. Extendible swap
    d. Roller-coaster swaps

57. On January 5, an Indian firm exported goods to an US firm for a consideration of USD 4,00,000 receivable on 15th of February. The spot exchange rate is Rs.44/USD and a March dollar future is trading at Rs.45/USD. You have taken march futures for hedging the receivable. On 15th February if the exchange rate in cash market drops to Rs.39/USD and in the futures markets it is trading at Rs.41/USD. How much is the futures profit/loss?
    a. Rs.16,00,000 (loss)
    b. Rs.16,00,000 (profit)
    c. Rs.20,00,000 (loss)
    d. Rs.20,00,000 (profit)

58. US entity has cash surplus of USD 200 million. Interest rates are 1.5%/1.7%. How much cash will it have in hand after one month?
    a. USD 200 million
    b. USD 200.25 million

c. USD 200.2833 million

59. You have sold goods worth 1,00,000 USD and the same was priced at an exchange rate of Rs.70 per USD. Current spot rate is Rs.68 per USD and the bankers have indicated a forward rate of Rs.67 per USD. How much is the profit/loss in operating profit if forward sale is agreed to?
    a. INR 1,00,000 (Loss)
    b. INR 3,00,000 (Loss)
    c. INR 1,00,000 (Profit)
    d. INR 3,00,000 (Profit)

60. The corporate treasurer of a US multinational receives a fax on 21st February from its European subsidiary. The subsidiary will transfer Euro 10 million to the parent company on 16th August. If the corporate treasurer plans to hedge through futures in the dollar market, will he buy or sell dollar futures?
    a. Long in USD futures
    b. Short in USD futures

61. Indian entity has deficit of Rs.1,000 lacs. Rate of interest in India is 6%/9%. How much will be the Indian entity deficit after 2 months with financing operations?
    a. INR 1,000 lacs
    b. INR 1,010 lacs
    c. INR 1,015 lacs
    d. INR 1,007.50 lacs

62. Hedging of all foreign exchange exposures is an example of _____
    a. Low risk reasonable reward strategy
    b. Low risk low reward strategy
    c. High risk low reward strategy
    d. High risk high reward strategy

63. US Subsidiary has payable of USD 2,00,000 and receivable of USD 4,00,000. USD has appreciated in the interim. What would be the impact on US subsidiary?
    a. Favorable impact
    b. Negative impact
    c. No impact

64. Spot rate = Rs.40/USD; Forward rate = Rs.45/USD Upfront premium to be paid for hedging = 2%. Tenor of contract = 6 months. Rate of interest = 12% per annum. How much is the effective cover rate for an importer?
    a. Rs.40.80
    b. Rs.45.90
    c. Rs.40.848
    d. Rs.45.954
    e. Rs.45.948

65. Gupta Garments exports goods to US. It can elect to bill either in Dollars or in Euro. Payment terms are 90 days. The 90 dollar swap is 1 – 0.5 and for Euro is 1.5 – 2. Which option is advisable?
    a. Billing in USD
    b. Billing in Euros
    c. Indifferent between billing in USD and Euros

66. Forward rate = USD 1.43/GBP; Expected spot rate = USD 1.41/GBP. Should we take a forward cover for dollar receivables?

a. We should take forward contract
b. We should leave it open
c. Indifferent

67. An Indian Company buys a 6 month put on 10 lakh USD with a strike price of Rs. 55/$ and a premium of Re. 2/$. The opportunity cost of money is 6% p.a. If the forward rate when the option was bought was Rs. 55 under what future spots rates would this have proved better than the option contract?
    a. <Rs.57.06 per USD
    b. >Rs.57.06 per USD
    c. <Rs.55.00 per USD
    d. >Rs.55.00 per USD

68. Cover rate of USD receivable = Rs.45/USD; Actual spot rate on maturity date = Rs.46/USD; Transaction amount = USD 1,00,000.; How much is the profit/loss by taking forward contract?
    a. Loss of 1,00,000
    b. Profit of 1,00,000
    c. No profit/loss

69. M/s. Sky products Ltd., of Mumbai, an exporter of sea foods has submitted a 60 days bill for EUR 5,00,000 drawn under an irrevocable Letter of Credit for negotiation. The company has desired to keep 50% of the bill amount under the Exchange Earners Foreign Currency Account (EEFC). Transit period is 20 days. Interest on post shipment credit is 8% per annum. The inflow will be realized at an effective rate of INR 80/USD. How much would be the interest paid by the company? Assume 360 days in a year for computing interest
    a. Rs.3,55,556
    b. Rs.2,66,667
    c. Rs.7,11,111
    d. Rs.5,33,333

70. Cover rate of USD payable = Rs.45/USD; Actual spot rate on maturity date = Rs.46/USD; Transaction amount = USD 1,00,000.; How much is the profit/loss by taking forward contract?
    a. Profit of Rs.1,00,000
    b. Loss of Rs.1,00,000
    c. No profit/loss

71. In case of non-deliverable forward contract, _____ is the date at which the difference between the prevailing market exchange rate and the agreed upon exchange rate is calculated
    a. Settlement date
    b. Target date
    c. Fixing date
    d. Entry date

72. A company has imported goods worth 1,00,000 USD. Spot rate is INR 74/USD and forward rate is INR 73.50/USD. Current interest rates in India are higher than USA. What is your advise to the company on taking forward contract?
    a. We should take forward contract
    b. We should keep the exposure open
    c. We are indifferent on taking forward cover

73. Citi Bank quotes JPY/ USD 105.00 -106.50 and Honk Kong Bank quotes USD/JPY 0.0090 - 0.0093. How much is the arbitrage gain if you have USD 1,000.
    a. Arbitrage is not possible
    b. USD 11.67

c.   USD 9.67
d.   USD 8.00

74. The company has submitted a 60 days bill of USD 5,00,000 to bank. Transit period of shipment is of 20 days. Forward rates available with the bank are of 1,2 and 3 months. What is the relevant exchange rate for clearance of bill?
    a.   1 month forward rate
    b.   2 month forward rate
    c.   3 month forward rate

75. Current spot rate is INR 50/USD. 6-month Forward rate is INR 55/USD. The company took a forward contract for 1,00,000 USD payable. Compute the amount of profit/loss if INR depreciated by 4 percent? (Please work with four decimals)
    a.   Profit of Rs.3,00,000
    b.   Loss of Rs.3,00,000
    c.   Profit of Rs.2,91,667
    d.   Loss of Rs.2,91,667

76. An Indian company has imported goods from Japan for 36 lacs YEN. The amount is equivalent to INR 10 lacs today. It is anticipated that exchange rate will change by 10 percent over the medium term. Indian company promises to take appropriate action in foreign exchange market in order to protect YEN payments. What is the expected exchange rate after 3 months?
    a.   YEN 3.60/INR
    b.   YEN 3.24/INR
    c.   YEN 3.96/INR

77. As per FEDAI Rule 6, a forward contract which remains overdue without any instructions from the customers on or before due date shall stand automatically cancelled within _____ days after the maturity date.
    a.   Three calendar
    b.   Three working
    c.   15 calendar
    d.   15 working

78. A has imported goods worth 1 lac euros payable on 31st December and entered into forward contract when exchange rate was INR 66-68/EURO. Today is November 30 and the importer wants to honor contract today. Spot rate is INR 65.50-66.50/EURO and one month forward contract is INR 67.50-68/EURO. How much would be the total outflow by the importer?
    a.   Rs.69,00,000
    b.   Rs.68,00,000
    c.   Rs.66,50,000
    d.   Rs.67,00,000

79. Bid rate = Rs.10 per USD; Ask Rate = Rs.11 per USD; How much is the spread %?
    a.   10.00%
    b.   9.09%
    c.   9.52%
    d.   8.00%

80. A customer with whom the Bank had entered into 3 months' forward purchase contract for Swiss France 10,000 at the rate of Rs. 27.25 comes to the bank after 2 months and request cancellation of the contract. One-month forward rate on date of cancellation is INR 27.45-27.52 per swiss franc. How much is the cancellation gain/loss?

   a. Loss of Rs.2700
   b. Profit of Rs.2700
   c. Loss of Rs.2000
   d. Profit of Rs.2000

81. An importer booked a forward contract on 10th April with delivery being on 10th June. The customer appears on June 17 and asks for extension of contract to August 10. What will be the date of cancellation of contract?
   a. June 10
   b. June 17
   c. June 13

82. In case of early delivery, Interest on outlay of funds is charged for _____
   a. Period of original contract
   b. Period of early delivery to the original due date
   c. No of days from the date or original contract to the early delivery date

83. Quotes in _____ are the rates quoted in amount of USD per unit of foreign currency
   a. American Terms
   b. European Terms
   c. Non-American Terms
   d. Non-European Terms

84. Spot rate: Rs.46.00/46.25 per USD; Assume the firm has USD 69,000 in current account earning no interest. ROI on rupee investment is 12% p.a. What should be the forward rate (INR/USD) for the firm to be indifferent between converting 69,000 USD into INR today or wait and convert after two months?
   a. Rs.47.175 per USD
   b. Rs.46 per USD
   c. Rs.46.92 per USD
   d. Rs.47 per USD

85. ABC Limited based out of India has exported goods to USA. It is going to receive 3,50,000 USD in 6 months. It plans to hedge exposure through money market. Interest rates in USA are 6%/8% per annum. Compute the deposit/borrowing in USD?
   a. Loan of USD 3,24,074
   b. Deposit of USD 3,24,074
   c. Loan of USD 3,36,539
   d. Deposit of USD 3,36,539

86. USD has appreciated by 10% against INR. How much is the likely depreciation of INR?
   a. Equal to 10%
   b. Greater than 10%
   c. Less than 10%

87. ABC Limited of India has imported goods worth USD 10,00,000 payable in 6 months. Interest rates in USA are 4%/6% per annum. The spot exchange rate is Rs.81.20-60 per USD. How much is the loan to be taken to cover this transaction in MMH?
   a. USD 9,70,874
   b. INR 7.96 crores
   c. INR 8.00 Crores
   d. None of the above

88. ABC Limited (exporter) needs to decide the currency for invoicing. He has choice of home currency (INR) and two foreign currencies (USD and GBP). Seller is not willing to accept INR and ABC Limited may lose business opportunity. USD has a deep forward market with lot of buyers and sellers whereas GBP does not have an active forward market. Which currency should the seller opt for billing?
    a. INR
    b. GBP
    c. USD
    d. Either of the currencies

89. An Indian Company buys a 6 month call on 10 lakh USD with a strike price of Rs. 50/$ and a premium of Re. 1/$. The opportunity cost of money is 12% p.a. At what spot rate on the date of maturity of options contract would the Indian Company gain?
    a. > Rs.50 per USD
    b. < Rs.50 per USD
    c. > Rs.51.06 per USD
    d. < Rs.51.06 per USD

90. A UK Company owes a German Company 25 lakhs Euros payable in 3 months. The spot rate EURO/GBP is 1.25-1.27. The company can borrow pounds @ 8% and deposit pounds @6%. It can borrow Euro @12% and deposit Euro@10%. How much is the deposit to be created today?
    a. EUR 25,00,000
    b. EUR 24,39,024
    c. GBP 19,51,219
    d. EUR 24,27,184

91. _____ is referred to as total of purchase and sale commitments of a bank to purchase or sale foreign exchange whether actual delivery has taken place or not
    a. Cash Position
    b. Bank Position
    c. Exchange Position
    d. Forward Position

92. A Limited of India has sold goods to USA. It wants to hedge the exposure through Money market hedge. It should borrow in _____ and create a deposit in _____ to complete MMH.
    a. INR and USD
    b. INR and INR
    c. USD and INR
    d. USD and USD

93. A company has a payable exposure of EUR 25,00,000. The final amount paid under MMH is GBP 20,00,000. The forward contract today is EUR 1.20 - 1.22 per GBP. What should the company do for hedging?
    a. Go ahead with MMH
    b. Go ahead with forward contract
    c. Indifferent between MMH and FC
    d. Do not hedge the exposure

94. A company can make a profit of Rs.10,00,000 if exports and import settlement is done as per spot rates. However, the same would decline to Rs.4,00,000 if they are realized and paid as per the due date. How much is the transaction exposure?
    a. 10,00,000
    b. 14,00,000

    c. 6,00,000

    d. 4,00,000

95. Exporter has availed short-term foreign currency loans. This is an example of which hedging strategy?
    a. Currency Invoicing
    b. Netting
    c. Leading and lagging
    d. Natural hedge strategy

96. A bank has an overbought position of USD 1,00,000 and cash balance of USD 25,000. It wants a cash balance of USD 40,000. What action should be taken?
    a. Buy USD 15,000 in spot market
    b. Sell USD 15,000 in spot market
    c. Buy USD 15,000 in forward market
    d. Sell USD 15,000 in forward market

97. A bank has an overbought position of USD 1,00,000 and cash balance of USD 25,000. It wants a cash balance of USD 80,000 and overbought position of USD 1,50,000. What action should be taken?
    a. Spot purchase of USD 55,000 and forward sell of USD 5,000
    b. Spot purchase of USD 55,000 and forward purchase of USD 50,000
    c. Forward purchase of USD 50,000
    d. Spot purchase of USD 55,000 and forward purchase of USD 5,000

98. Cancellation of DD issued is recorded as _____
    a. Purchase in exchange position
    b. Sale in exchange position
    c. Outflow in cash position
    d. Inflow in cash position

99. Spot rate (€ per £) = 1.998 $\pm$ 0.002; Forward rate (€ per £) = 1.979 $\pm$ 0.004. You need to pay EUR 2,50,000 in six months. How much would be the GBP outflow if you take forward contract?
    a. GBP 1,26,326
    b. GBP 1,26,839
    c. GBP 1,26,072
    d. GBP 1,26,582

100. Nostro account would mean _____
    a. Our account with you
    b. Your account with us

101. What type of foreign exchange risk exposure measures the impact on company's competitive position?
    a. Transaction exposure
    b. Translation exposure
    c. Economic exposure

102. Spot sale of foreign currency is recorded as _____
    a. Sale in Exchange position and inflow in cash position
    b. Sale in Exchange position and outflow in cash position
    c. Purchase in Exchange position and outflow in cash position
    d. Purchase in Exchange position and inflow in cash position

103. How is forward purchase recorded in cash position?
   a. Inflow
   b. Outflow
   c. Not recorded

104. Quote 1: EUR 1.24-1.40 per GBP; Quote 2: INR 75.25-35 per GBP. How many GBP can be purchased with INR 1,20,000?
   a. 1,977.41
   b. 1,974.78
   c. 2,232.56
   d. 2,229.60

105. Purchase of bill is recorded as _____
   a. Purchase in Exchange position
   b. Sale in exchange position
   c. Inflow in cash position
   d. Outflow in cash position

Answer:

1.	USD Return $= \dfrac{105 - 100 + 10}{100} \, x \, 100 = 15.00\%$ USD has depreciated by 5 percent (1 + HCR) = (1 + FCR) x (1 - Depreciation percentage); (1 + HCR) = (1 + 15%) x (1 - 5%); (1 + HCR) = 1.15 x 0.95; (1 + HCR) = 1.0925 **Home currency return = 9.25%**
2.	$BID \left(\dfrac{USD}{INR}\right) = \dfrac{1}{ASK\left(\dfrac{INR}{USD}\right)}$ $BID \left(\dfrac{USD}{INR}\right) = \dfrac{1}{65.80} = 0.015198$
3.	950 will be the last three digits of PIPS portion of the ask rate. Hence Ask rate will be 1.5950.
4.	Two
5.	$\left(\dfrac{EURO}{GBP}\right) = \left(\dfrac{EURO}{USD}\right) \, x \, \left(\dfrac{USD}{GBP}\right)$ $BID \left(\dfrac{EURO}{GBP}\right) = BID\left(\dfrac{EURO}{USD}\right) \, x \, BID \left(\dfrac{USD}{GBP}\right)$ $BID \left(\dfrac{EURO}{GBP}\right) = \left(\dfrac{1}{1.2600}\right) \, x \, (1.5606)$ $BID \left(\dfrac{EURO}{GBP}\right) = 1.2386$
6.	KC = 10,00,000 HKD; UKC = ? INR $INR = HKD \, x \, \left(\dfrac{INR}{HKD}\right)$ $INR = HKD \, x \, ASK\left(\dfrac{INR}{HKD}\right)$ $INR = HKD \, x \, ASK\left(\dfrac{INR}{USD}\right) x \, ASK\left(\dfrac{USD}{HKD}\right)$ $INR = 10,00,000 \, x \, 65 \, x \, \left(\dfrac{1}{7.80}\right)$ INR = 83,33,333 Profit = Sales proceeds - purchase cost = 65,00,000 - 83,33,333 = Loss of 18,33,333
7.	Return is same for both options. However, from risk perspective, the investment in fixed income desk of US is more beneficial as the chance of variation in fixed income securities is less as compared to Equity Desk. Hence investment should be done in USA.
8.	Spread of forward rate is always higher than spread of spot rate. This is because spot market always has the lowest bid- ask spread and the spread will steadily widen as the duration

	lengthens. This is because the uncertainty and the liquidity concerns increase as we go forward in time
9.	Known component = 10,00,000 USD; Unknown component = ? INR $INR = USD \times \left(\dfrac{INR}{USD}\right)$ We are going to buy USD and banker would sell it. Banker will sell the same at Ask rate $INR = USD \times ASK\left(\dfrac{INR}{JPY}\right) \times ASK\left(\dfrac{JPY}{USD}\right)$; $INR = 10 \text{ lacs} \times \left(\dfrac{1}{2.05}\right) \times 132.50 = INR\ 646.34 \text{ lacs}$ Sell proceeds = 10 lacs x 65 = 650 lacs Profit = 650 lacs - 646.34 lacs = 3.66 lacs
10.	Amount that can be invested today is the money which is not needed now. Hence 60% of Rs.400 billion can be invested today.
11.	$BID\left(\dfrac{USD}{GBP}\right) = BID\left(\dfrac{USD}{INR}\right) \times BID\left(\dfrac{INR}{GBP}\right) = \left(\dfrac{1}{66}\right) \times 80 = 1.2121$ Exchange margin needs to be deducted and 0.5% is 0.0061 and revised bid rate will be 1.2061 $ASK\left(\dfrac{USD}{GBP}\right) = \left(\dfrac{1}{65}\right) \times 81 = 1.2462$ Exchange margin needs to be added and 1% is 0.0125. Revised ask rate will be 1.2587
12.	Scientific Forecasting
13.	The given rate has been interpreted as INR/USD based on current exchange rates $INR\ outflow = USD \times \left(\dfrac{INR}{USD}\right)$ $INR\ Outflow = USD \times Ask\left(\dfrac{INR}{USD}\right)$ Ask rate given in question is 73.00. We cannot take 73 as pips as the same will make the ask rate lower than bid rate. That scenario is not possible and hence given 73 is taken as outright forward rate • Relevant ask rate = 73 + 0.5% = INR 73.365/USD • Total outflow = 1,000 x 73.365 = INR 73,365
14.	The currency will depreciate
15.	• Amount of exposure = JPY 5,00,000 (or) Rs.2,35,294 (5,00,000/2.125) • Relevant strike price = JPY 2.125/INR. Product currency is INR and this is a contract to buy/sell INR. **The company has to sell INR and hence we should go for put option** • Premium amount = INR 2,35,294 x JPY 0.098 = JPY 23,059 • **Premium in INR = 23,059/1.9516 = INR 11,815**
16.	Any appreciation or depreciation can be added or subtracted to the product. Current quote is USD 2 per GBP. The quote will be converted as GBP 0.5 per USD. Appreciation of 10 percent will make it GBP 0.55 per USD. This quote will be converted back and it will become USD 1.82 per GBP
17.	INR is the price in this question and hence the formula is $\dfrac{SR - FR}{FR} \times \left(\dfrac{12}{m}\right) \times 100$ $INR\ change = \dfrac{50 - 52}{52} \times \left(\dfrac{12}{3}\right) \times 100 = -15.40\%$ We are getting negative answer and hence INR has depreciated by 15.40%
18.	

Particulars	Bid rate	Ask rate
Swap points for 1 month	100	150
Swap points for 3 months	300	400
Differential points for 2 months	200	250
Proportionate points for 1.5 months	150 [200 x1.5/2]	187.50 [250x1.5/2]
Swap points for 2.5 months [1 month + Proportionate of 1.5 month]	250	337.50

19.	• 2/10 net 90 would mean that the company will get 2 percent discount if the payment is done in 10 days. Hence the company will be making a payment of only 98,000 USD • Rupee cost of paying the account within 10 days = 98,000 USD x Rs.55 = Rs.53,90,000 • Rupee cost of paying in 90 days = 1,00,000 USD x 56 = Rs.56,00,000

	• Saving in payment if early payment is made = 56,00,000 – 53,90,000 = Rs.2,10,000 • Time value of money component = [1,00,000 – 98,000] x Rs.56.00 = Rs.1,12,000 • Currency value fluctuation component = 98,000 x [56 – 55] = Rs.98,000
20.	Spot Ask rate = 66.90. Swap points are in descending order and same needs to be deducted. Swap points are 1.40/1.20. Forward ask rate = 66.90 - 1.20 = 65.70
21.	Transaction Exposure
22.	Spot rate = Rs.50/USD; Risk free rate in home country = 12% per annum (or) 6% per half year; Risk free rate in foreign country = 4% per annum (or) 2% per half year Forward rate $= 50 \times \dfrac{1.06}{1.02} = $ Rs. 51.96
23.	**Computation of interest:** <table><tr><td>**Particulars**</td><td>**Amount**</td></tr><tr><td>Nov 30 – Bank will buy from customer</td><td>-75.40</td></tr><tr><td>Nov 30 – Bank will sell at spot rate to some other Bank</td><td>75.22</td></tr><tr><td>**Outflow for banker**</td><td>**0.18**</td></tr><tr><td>Total outflow for banker (1,00,000 x 0.18)</td><td>18,000</td></tr><tr><td>**Interest cost to be recovered (18,000 x 18% x 31/365)**</td><td>**275**</td></tr></table> Hence customer will pay Rs.275 to Bank
24.	SWIFT
25.	(1 + USD return) = (1 + INR return) x (1 + INR Appreciation %) (1 + 0.06) = (1 + INR return) x (1 + 0.05); (1 + INR return) = $\dfrac{1.06}{1.05}$; INR return = 0.95%
26.	Spot rate = Rs.60 per GBP; Inflation for 3 months in India = 2.5%; Inflation in UK for 3 months = 1.5% Forward rate $= 60 \times \dfrac{1.025}{1.015} = $ Rs. 60.59 per GBP
27.	Translation exposure
28.	Appreciation of INR as demand for foreign currency will reduce due to lower imports
29.	The strike price of option is USD 1.70/GBP. Product currency is GBP and hence we can buy/sell GBP with option contract. The company needs to buy USD. This can also be considered as selling GBP. **The company plans to sell GBP and hence we should opt for Put option**
30.	Option contract **Explanation:** In case if contract is not secured even then will not be bound by the contract in AUD
31.	High risk low reward strategy
32.	Spot rate = 1.40 USD per GBP; Rh (USA rate) = 5% per annum; Rf (UK rate) = 10% per annum Forward rate $= \dfrac{1.40 \times 1.05 \times 1.05}{(1.10 \, x \, 1.10)} = $ 1.2756 USD/GBP
33.	$CHF = GBP \times ASK\left(\dfrac{CHF}{GBP}\right)$ $CHF = GBP \times ASK\left(\dfrac{CHF}{USD} \times \dfrac{USD}{GBP}\right)$ CHF = 10,00,000 x (1.4655 x 1.7650) **CHF outflow = CHF 25,86,608** **Note:** • Since there are two banks, the customer can choose either of the two banks. The customer should choose a bank which leads to lower outflow and higher inflow • For CHF/USD we are using Bank A as it has lower ASK rate and for USD/GBP we are using Bank B as it has lower ASK rate
34.	Investor can buy 1,00,000 at lower ask rate of 67.40 from Bank A. Investor can sell 1,00,000 USD to Bank B at higher bid rate of 68.40. Investor will make gain of Rs.1,00,000 (68,40,000 - 67,40,000)
35.	Interest rate and Inflation rate
36.	Spot rate = Rs.40/USD; Actual Rh(India) = 10% per annum or 5% per half year; Actual Rf(USA) = 4% per annum or 2% per half year Fair Rh calculation $\dfrac{1 + Rh}{1 + 2\%} = \dfrac{41.50}{40}$; (1 + rh) = 1.05825; Rh = 5.83%

	Fair Rh in India is higher than actual Rh and hence we should borrow in India and invest in USA
37.	USD currency has depreciated and this would mean interest rates in USA is more than that of Germany. **Hence, we can conclude that interest rates in Germany is 2.50% lower than that of USA**
38.	1,00,000 USD can be converted into INR and the same will be Rs.48,30,000. Rs.48,30,000 will be converted into GBP and the same will be GBP 62,306.50. GBP 62,306.50 will be converted into USD and the same will be USD 1,01,129.70. Arbitrage gain = 1,01,129.70 - 1,00,000 = 1,129.70 USD
39.	Standardized communication system
40.	Indian firm should opt for home currency invoicing to hedge transaction. Hence export should be billed in INR
41.	Speculators can have a substantial impact on exchange rate through speculations **Explanation:** A lot of speculation activities results in unanticipated demand and supply of foreign currencies
42.	Insistence on currency invoicing can lead to loss of business
43.	Spot exchange rate = 0.8006 EURO per USD; Forward discount on EURO is 4% per year and the same would be 2% for 6 months. Forward discount/premium can be applied only to the product only to get the forward rate. In the above quote USD is the product and hence we should convert this into the other quote; 0.8006 EURO per USD = 1.2491 USD/EURO **Forward rate = 1.2491 – 2% = 1.2241 USD/EURO (or) 0.8169 EURO/USD**
44.	Low risk reasonable reward strategy
45.	Depreciation of Home currency and Depreciation of home currency

46.	INR is the product currency in the quote

Premium or discount %	$\dfrac{\text{Spot rate} - \text{Forward rate}}{\text{Forward rate}} \times \dfrac{12}{m} \times 100$	
Using BID Rate	$\dfrac{29.45 - 29.36}{29.36} \times \dfrac{12}{3} \times 100$	1.23% (appreciation)

47. **Number of contracts:**

Particulars	Amount
Amount of exposure	USD 1,00,000
Amount of exposure in INR (1,00,000/0.02118)	INR 47,21,435
Size of one contract	INR 4,72,000
No of contracts	**10**

Futures settlement:

Date	Position	Action	Reference Date	Rate
June 1	Original Position	Buy	Sep 01	(USD 0.02118/INR)
Sep 1	Opposite Position	Sell	Sep 01	USD 0.02134/INR
Profit per INR				USD 0.00016/INR
Total Profit (0.00016 x 10 x 4,72,000)				**USD 755.20**

48.	Import of goods will lead to foreign currency liability. We should go for billing in depreciating currency. Hence INR is preferable. However, counterparty will prefer either in USD or GBP. We should therefore accept a currency which will have lower appreciation and hence we should prefer GBP

49. **Swap loss:**

Date	Position	Action	Reference Date	Rate
Apr 10	Original Position	Buy (ASK)	June 10	-64.28
June 10	Opposite Position	Sell (BID)	June 10	63.80
June 10	New Position	Buy (ASK)	Next contract	-63.95
Effective rate			-64.28+63.80-63.95	**-64.43**
Loss on cancellation per USD			-64.28+63.80	-0.48
Total loss on cancellation			-0.48 x 2,00,000	**-96,000**
Effective loss per USD			-64.43 – (-64.28)	-0.15
Total effective loss			-0.15 x 2,00,000	**-30,000**

	• Swap loss = Rs.30,000 • Interest amount = Cancellation loss x 12% x 3/365 = 96,000 x 12% x 3/365 = Rs.95
50.	**WN 1: Structure of interest rates:** 	Particulars	USD	AUD
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ABC Limited	5%	12.6%

DEF Limited	7%	13%	
			
			• Total interest rate of combination 1 [ABC Limited (USD) & DEF Limited (AUD)] = 5% + 13% = 18%
			• Total interest rate of combination 2 [ABC Limited (AUD) & DEF Limited (USD)] = 12.6% + 7% = 19.6%
			• **Ideal combination:** Combination 1 – ABC Limited should borrow in USD and DEF Limited should borrow in AUD
			• **Actual scenario:** Combination 2 – ABC Limited wants to borrow in AUD and DEF Limited wants to borrow in USD
			• Scope for Currency cum interest rate swap exist as the actual scenario does not match with ideal scenario
			• **Amount of swap gain = 19.6% - 18% = 1.6%**
			• **Share of swap gain:**
			   o Dealer's margin (Share) = 0.2%
			   o ABC Limited's share = 0.7%
			   o DEF Limited's share = 0.7%
			• Effective borrowing rate of ABC Limited = Original rate – share of swap gain = 12.60% - 0.70% = 11.90%

51.	Yen (liability) will appreciate by 5 percent over three months. The same would correspond to 20 percent for a year. Interest rate for borrowing is 10 percent per annum. **Hence it is beneficial to borrow money at 10 percent and pay liability today**. Else liability will appreciate by 20 percent leading to higher INR outflow.
52.	Investment rate and borrowing rate
53.	The company should make the payment after three months as the liability (USD) is expected to depreciate over the next three months
54.	Netting
55.	Payment Gateway
56.	Circus swap which stands for Combined Interest Rate and Currency Swap
57.		Date	Position	Action	Reference Date	Rate
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Jan 5	Original Position	Sell	March 31	Rs.45/USD
Feb 15	Opposite Position	Buy	March 31	(Rs.41/USD)
Profit per USD				Rs.4/USD
Profit for USD 4,00,000 [4,00,000 x 4]				**Rs.16,00,000**	
58.	Entity has cash surplus and hence investment will be done. The same would be done at lower rate of 1.5% Interest earned = 200 million x 1.5% x $\frac{1}{12}$ = 0.25 million Surplus after one month = USD 200 million + USD 0.25 million = USD 200.25 million
59.	Loss/gain in operating profit is computed by comparing the billed rate with realization rate. Billed rate is Rs.70 per USD and the realization rate will be Rs.67 per USD if the forward sale is agreed to. Hence overall impact in operating profit = 1,00,000 x (70 – 67) = Rs.3,00,000 (loss)
60.	The company plans to sell EUROS and hence it would be buying USD. Hence, we should go long (buy) USD futures for hedging.
61.	There is a deficit and hence the amount is to be borrowed. Borrowing will happen at 9% Interest expense for two months = 1000 lacs x 9% x $\left(\frac{2}{12}\right)$ = Rs. 15 lacs Balance at end of month 2 = 1,000 lacs + 15 lacs = 1,015 lacs
62.	Low risk low reward strategy
63.	US Entity has net receivable of USD 2,00,000. This is their home currency. Hence any appreciation/depreciation of home currency will not impact them as their final realization will continue to be USD 2,00,000. In this scenario only the counterparty (its customers) will be impacted

64.	Cover rate = Forward rate + Premium + Interest on premium Cover rate $= 45 + 0.90 + \left[0.90 \times 12\% \times \dfrac{6}{12}\right] = 45.90 + 0.054 = $ Rs. 45.954/USD
65.	Gupta Garments should choose a currency which is expected to appreciate (assets should appreciate). The 90-day dollar swap is in descending order and hence dollar is expected to depreciate. Similarly, 90-day euro swap is in ascending order and hence Euro is expected to appreciate. **The company should opt for billing in Euros (appreciating currency)**
66.	Let us assume that we have receivable of 100 USD GBP realization if we cover through Forward Contract $= \dfrac{100}{1.43} = $ GBP 69.93 GBP Realization if we keep it open $= \dfrac{100}{1.41} = $ GBP 70.92 We have higher realization if the exposure is open and hence we should keep the exposure open
67.	Premium of put option = Rs.2.00 + (2 x 6% x 6/12) = Rs.2.06; Minimum inflow under option contract = Rs.55.00 – 2.06 = Rs.52.94 per USD. Under option contract the minimum selling price will be Rs.52.94/USD. **However, if the future spot rate is higher than Rs.55/USD, then inflow will be Spot rate - 2.06.** Under forward option, the company will receive Rs.55/USD irrespective of future spot rates. Hence option contract can be beneficial if the inflow under option contract is higher than Rs.55/USD. Inflow will be Rs.55/USD if spot rate is Rs.57.06/USD (57.06-2.06 = 55). **Hence option contract will be beneficial if future spot rates are higher than Rs.57.06/USD**
68.	• Realization if FC was not taken = 1,00,000 x 46 = Rs.46,00,000 • Realization by taking FC = 1,00,000 x 45 = Rs.45,00,000 • Loss of Rs.1,00,000 due to forward contract as the net realization is on lower side
69.	The company would have taken post-shipment credit at 8% for a period of 80 days as the realization will happen after 80 days (60 days credit + 20 days transit). Company plans to keep 50% funds in EEFC account and hence balance 50% it will convert in INR and repay the loan. Hence loan taken by the company will be equal to the planned realization in INR. Loan taken = 2,50,000 x 80 = Rs.2,00,00,000 **Interest to be paid $= 2,00,00,000 \times 8\% \times \dfrac{80}{360} = $ Rs. 3,55,556**
70.	• INR outflow under FC = 45,00,000 • INR outflow if cover was not taken = 46,00,000 • Net saving/profit by taking FC = 1,00,000
71.	Fixing date **Note:** Settlement date is the date on which the profit/loss would be paid whereas profit/loss is computed on the basis of the rate prevailing on fixing date. Both dates can be same day as well
72.	Interest rates in India are higher than USA and hence INR will depreciate and USD will appreciate. So as per IRPT we expected USD liability to appreciate. However, the current exchange rates are indicating USD depreciation and hence we should go ahead and take forward cover. Outflow under forward contract = Rs.73,50,000. Expected outflow if exposure is kept open = >74,00,000 (as USD will appreciate)
73.	Quote in Citi bank = JPY 105.00 – 106.50 per USD **Quote in Hong Kong Bank:** <table><tr><td>$BID\left(\dfrac{JPY}{USD}\right) = \dfrac{1}{0.0093}$</td><td>JPY 107.53/USD</td></tr><tr><td>$BID\left(\dfrac{USD}{JPY}\right) = \dfrac{1}{0.0090}$</td><td>JPY 111.11/USD</td></tr></table> Arbitrage opportunity can arise if we sell USD at higher bid rate of JPY 107.53/USD and buy USD at lower ask rate of JPY 106.50 per USD <table><tr><th>Particulars</th><th>Calculation</th><th>Amount</th></tr><tr><td>Sell 1,000 USD in Hong Kong Market</td><td>1,000 x 107.53</td><td>JPY 1,07,530</td></tr><tr><td>Sell JPY 1,07,530 in Citi Bank</td><td>$\dfrac{1,07,530}{106.50}$</td><td>USD 1,009.67</td></tr><tr><td>**Arbitrage gain**</td><td>1,009.67 – 1,000</td><td>**USD 9.67**</td></tr></table>

74.	The money will be realized in 80 days (60 days bill + 20 days transit period). It will have to be rounded off to the lower of months (2.67 months) and hence 2 months forward rate is to be taken
75.	• Outflow under forward contract = 1,00,000 x 55 = Rs.55,00,000 • Outflow if forward contract was not taken: o Spot rate = INR 50/USD (or) USD 0.02 per INR o INR depreciation = 4%; Actual spot rate = 0.02 - 4% = USD 0.0192/INR (or) INR 52.0833/USD • Outflow if forward contract was not taken = 1,00,000 x 52.0833 = Rs.52,08,333 • We have paid more by taking forward contract and hence there is a loss. Amount of loss = 55,00,000 - 52,08,333 = Rs.2,91,667
76.	Current spot rate $= \dfrac{\text{YEN 108 lacs}}{\text{INR 30 lacs}} = $ YEN 3.60/INR Exchange rate will change by 10 percent and an Indian importer would be worried about depreciation of INR. Hence exchange rate change of 10 percent will be interpreted as depreciation of INR. New exchange rate = YEN 3.60/INR - 10% = YEN 3.24/INR
77.	Three working
78.	• Contract will get honored at spot ASK rate of November 30. Outflow towards honor of contract = 1,00,000 x 66.50 = Rs.66,50,000 • Cancellation gain/loss: Original contract was taken at ASK rate of Rs.68 and opposite cancellation rate is 67.50. Net loss on cancellation = 0.50/USD (or) Rs.50,000 • Total outflow = 66,50,000 + 50,000 = Rs.67,00,000
79.	Spread % $= \dfrac{\text{Ask rate} - \text{Bid rate}}{\text{Ask rate}}$ x 100 $= \dfrac{11 - 10}{11}$ x 100 = 9.09%
80.	Original contracted rate = INR 27.25/Swiss franc. The bank has entered into forward purchase and hence the customer has entered into sale contract. Hence contract will get cancelled at opposite Ask rate of Rs.27.52/Swiss franc. Loss on cancellation = INR 0.27/Swiss franc (or) Rs.2,700
81.	Due date of forward contract = June 10; Grace period of honoring the contract = 3 days; Date of cancellation of contract = Date on which customer appears or 3 days whichever is earlier and hence contract will get cancelled on June 13
82.	Period of early delivery to the original due date
83.	American Terms
84.	<table><tr><td>Particulars</td><td>Redeem today</td><td>Redeem after 2 months</td></tr><tr><td>INR receipt today on conversion</td><td>31,74,000 (69,000 x 46)</td><td>-</td></tr><tr><td>Interest income for 2 months</td><td>63,480 (31,74,000 x 12% x 2/12)</td><td>-</td></tr><tr><td>INR receipt on conversion in M2</td><td>-</td><td>32,37,480 (69,000 x 46.92)</td></tr><tr><td>Total inflow in INR</td><td>32,37,480</td><td>32,37,480</td></tr></table> Hence the indifferent forward rate is Rs.46.92 per USD as the same would lead to same inflow in INR whether we convert today or wait and convert after two months.
85.	We have foreign currency asset (receivable) and hence we need to create a matching liability. We will take a loan in USD. Proportionate borrowing rate for 6 months is 4% Loan to be taken $= \dfrac{3,50,000}{1 + 4\%} = $ USD 3,36,539
86.	Less than 10% **Example:** Spot rate = USD 0.20 per INR Forward rate = USD 0.22 per INR Depreciation of INR $= \dfrac{0.20 - 0.22}{0.22} x$ 100 = −9.09%
87.	We have USD liability and hence we need to create matching USD asset Amount of USD deposit to be created $= \dfrac{10,00,000}{1 + 2\%} = $ USD 9,80,392 INR needed to purchase 9,80,392 USD = 9,80,392 x 81.60 = INR 8.00 Crores

88.	USD **Explanation:** Seller cannot choose INR as he would lose the business opportunity. He should therefore choose a currency which has deep forward market. Hence billing should be in USD.
89.	Maximum outflow under option contract = 50 + (50 x 2%) + (1 x 12% x 6/12) = Rs.51.06/USD Any spot rates above Rs.51.06/USD, the outflow under option contract will be lower than that of spot contract. Hence option contract is beneficial above Rs.51.06/USD while comparing option and spot alternative
90.	We have a foreign currency liability of EUR 25,00,000 and we should create a matching deposit that will mature to EUR 25,00,000 Amount of deposit to be created $= \dfrac{25,00,000}{1 + 2.5\%} = $ EUR 24,39,024
91.	It has exported goods and hence has foreign currency asset (USD). It should create a matching liability and hence **borrow in USD.** The borrowed amount should be **converted into INR and deposited**
92.	Exchange
93.	**Payable under forward contract:** GBP $=$ EUR x ASK $\left(\dfrac{GBP}{EUR}\right)$ GBP $= 25,00,000$ x $\left(\dfrac{1}{1.20}\right) = $ GBP 20,83,333 Outflow under forward contract is higher and hence the company should go for MMH to cover the exposure
94.	Transaction exposure = Profit as per spot rates – Profit as per forward rates Transaction exposure = 10,00,000 – 4,00,000 = Rs.6,00,000
95.	Natural hedge strategy
96.	It has balance of USD 25,000 and should do a spot purchase of USD 15,000 to make the balance USD 40,000
97.	First we should adjust the cash balance and hence we will do spot purchase of USD 55,000. This will increase the cash balance to USD 80,000. This transaction will also increase overbought position as USD 1,55,000. We need an over-bought position of USD 1,55,000 and hence we should do forward sell of USD 5,000 to make the final position as USD 1,50,000
98.	Draft issue is recorded as sale transaction in exchange position. Cancellation of same will reverse the transaction and the same would be recorded as purchase in exchange position
99.	GBP = EURO x ASK $\left(\dfrac{GBP}{EUR}\right)$; GBP = 2,50,000 x $\left(\dfrac{1}{BID\left(\frac{EUR}{GBP}\right)}\right) = \dfrac{2,50,000}{1.975} = $ **GBP 1,26,582** BID rate = 1.979 – 0.004 = 1.975
100.	Our account with you
101.	Economic Exposure
102.	Sale in Exchange position and outflow in cash position
103.	Not recorded
104.	Known component = Rs.1,20,000; Unknown component = ? EUR Euro $=$ INR x $\left(\dfrac{Euro}{INR}\right)$ Euro $=$ INR x BID $\left(\dfrac{Euro}{INR}\right)$ Euro $=$ INR x BID $\left(\dfrac{Euro}{GBP}\right)$ x BID $\left(\dfrac{GBP}{INR}\right)$ Euro $= 1,20,000$ x1.24 x $\dfrac{1}{75.35} = $ **EUR 1,974.78**
105.	Purchase in Exchange position

Chapter 11 – International Financial Management

1. In international capital budgeting, _____ is used for computing after tax cash flow accruing to the parent firm
   a. Home country tax rate
   b. Host country tax rate
   c. Higher of home/host country tax rate
   d. Lower of home/host country tax rate

2. PBT of the project = Rs.100 crores; Tax rates in India = 30% corporate tax and 10% with-holding tax. Taxes paid in India will not be eligible for tax credit in USA. How much is the repatriable amount?
   a. Rs.70 crores
   b. Rs.60 Crores
   c. Rs.63 crores
   d. Rs.77 crores

3. Which of the following scenarios best represents the concept of American Depository Receipts (ADRs)?
   a. A French company lists its shares on the New York Stock Exchange (NYSE).
   b. A U.S. company issues bonds denominated in Euros to European investors.
   c. A German company issues bonds that can be converted into U.S. dollar-denominated equity shares.
   d. A Japanese company issues bonds in Japanese Yen that can be converted into Japanese equity shares.

4. Required return in INR is 12% per annum. Risk-free rate in India and USA is 8% and 4%. How much is the required rate of return in USD?
   a. 8.00%
   b. 16.00%
   c. 7.86%
   d. 16.31%

5. A company is considering an overseas expansion project. Which of the following would likely require additional analysis in international capital budgeting compared to domestic capital budgeting?
   a. Regulatory compliance
   b. Local competitors
   c. Labor market trends
   d. Domestic interest rates

6. K Ltd. currently operates from 4 different buildings and wants to consolidate its operations into one building which is expected to cost Rs. 90 crores. The Board of K Ltd. had approved the above plan and to fund the above cost, agreed to avail an External Commercial Borrowing (ECB) of GBP 10 m from G Bank Ltd. Interest Cost is GBP 6 months LIBOR + Margin of 2.50%. The 6-month LIBOR is expected to be 1.05%. Average Loan Maturity life will be 3.4 years with an overall tenure of 5 years. How much is the expected interest cost assuming LIBOR remains at 1.05%?
   a. GBP 0.8875 million
   b. GBP 1.775 million
   c. GBP 1.207 million
   d. GBP 0.6035 million

7. Which of the following factors are crucial in multinational capital budgeting?
   a. Cash flows from domestic projects.
   b. Profits remitted to the host country.

    c.   Effect of foreign exchange risk on the parent firm's cash flow.

    d.   Changes in rates of inflation in the parent country

8.   An Indian company is setting up a project in USA. It currently has operations in USA which has surplus funds of USD 20,00,000. These funds cannot be repatriated to India due to restrictions. New project will cost USD 50,00,000 and the company would partly fund the investment project with the available surplus of USD 20,00,000. How much should be the initial outflow for evaluating the project?

    a.   USD 50,00,000

    b.   USD 70,00,000

    c.   USD 30,00,000

9.   NPV of project is Rs.10,00,000. Spot exchange rate is Rs.50 per USD. How much would be the NPV in USD?

    a.   Cannot be calculated with given information

    b.   USD 5 crores

    c.   USD 20,000

    d.   USD 10,000

10. What is the primary objective of an International Financial Centre (IFC)?

    a.   Providing tax incentives to local businesses

    b.   Facilitating cross-border financial transactions

    c.   Promoting agricultural development

    d.   Regulating local retail markets

11. An Indian company is planning to do a project in Nepal. The company can raise loan for theme park in Nepal @ 9%. The tax rate in India is 30% and in Nepal it is 20%. The current WACC of the company is 12%. The company's current equity beta is 0.45. The company's funding ratio for the Water Park would be 55% equity and 45% debt. The company has gathered the relevant information about its nearest competitor in Nepal. The competitor's market value of the equity is NPR 1850 crores and the debt is NPR 510 crores and the equity beta is 1.35. How much is the asset beta and equity beta of the project?

    a.   1.132 Times and 1.873 Times

    b.   1.132 Times and 1.780 Times

    c.   1.106 Times and 1.830 Times

    d.   1.106 Times and 1.739 Times

12. An MNC company in USA has surplus funds to the tune of USD 10 million for six months. The finance director of the company is interested in investing in EURO for higher returns. There is DTAA in force between USA and Germany. Following are the details of the investment

Particulars	Amount
EURO/USD Spot	0.4040/41
6 months forward	67/65
Rate of interest for 6 months (p.a.)	5.95%-6.15%
Withholding tax applicable for interest income	22%
Tax as per DTAA	10%

How much would be the withholding tax on interest income?

    a.   EUR 12,019.00

    b.   EUR 26,441.80

    c.   EUR 12,120.00

    d.   EUR 26,664.00

13. What distinguishes Global Depository Receipts (GDRs) from American Depository Receipts (ADRs)?

    a.   GDRs are issued by U.S. companies, while ADRs are issued by non-U.S. companies.

    b. GDRs are traded on domestic stock exchanges, while ADRs are traded on international stock exchanges.

    c. GDRs are denominated in U.S. dollars, while ADRs are denominated in the issuer's home currency.

    d. GDRs represent ownership in a foreign company and are traded on international stock exchanges, while ADRs represent ownership in a foreign company and are traded on U.S. stock exchanges

14. A proposed foreign investment involves creation of a plant with an annual output of 1 million units. The entire production will be exported at a selling price of USD 10 per unit. The plant at the current rate of exchange will have a depreciation of USD 1 million annually. There is a likely decline in value of USD by 10 percent. How much would be the selling price and depreciation in USD post decline in value of USD?

    a. USD 10 and USD 0.9 million

    b. USD 10 and USD 1 million

    c. USD 9 and USD 0.9 million

    d. USD 9 and USD 1 million

15. PBT of the project = Rs.100 crores; The US based company will be subjected to corporate tax of 30 per cent and with – holding tax of 10% in India and will be eligible for tax credit in India. How much is the repatriable amount?

    a. Rs.70 crores

    b. Rs.60 Crores

    c. Rs.63 crores

    d. Rs.77 crores

16. A company is making a new issue of equity shares to refund existing bonds. The existing bonds carry interest rate of 15% and current outstanding is 6 million. Life of the bond is 5 years. For early redemption there is prepayment penalty of USD 3,50,000 to be paid. Cost of capital is 10%. How much is the NPV of bond refunding?

    a. USD 11,37,900

    b. USD 7,87,900

    c. USD 4,37,900

    d. NPV is negative

17. A project will generate cash flows of USD 20,00,000 in year 1, USD 40,00,000 in year 2 and USD 60,00,000 in year 3. Initial investment is USD 80,00,000. There are restrictions on repatriation of funds and only 50% of profits can be repatriated in each year and the balance cash flows can be repatriated on completion of project. Non-repatriated amount can be invested in fixed deposit giving return of 2%. Cost of capital is 10%. How much is the NPV of the project?

    a. USD 16,28,000 (Positive)

    b. USD 13,20,000 (Positive)

    c. USD 13,80,380 (Positive)

    d. Negative NPV

18. What is the primary difference between Foreign Currency Convertible Bonds (FCCBs) and Euro Convertible Bonds?

    a. FCCBs are issued by European governments, while Euro Convertible Bonds are issued by non-European governments.

    b. FCCBs can be converted into equity shares denominated in any foreign currency, while Euro Convertible Bonds can only be converted into Euro-denominated equity shares.

    c. FCCBs are designed exclusively for domestic investors, while Euro Convertible Bonds are targeted at international investors.

     d.   FCCBs can only be issued by financial institutions, while Euro Convertible Bonds can be issued by any type of corporation.

19. What does full capital convertibility mean?
    a.   Transfer of funds from one country to another country with restrictions
    b.   Transfer of funds from one country to another country is not allowed
    c.   No restriction on transfer of funds from one country to another country

20. A US based company is setting up a subsidiary in USA. The project will involve Additional cash fixed cost of US $ 30 million p.a. and project's share of allocated fixed cost will be US $ 3 million p.a. based on principle of ability to share. How much should be taken as fixed cost while evaluating the capital budgeting decision?
    a.   USD 30 million
    b.   USD 33 million
    c.   USD 27 million

21. An Indian company has issued GDR. It has now declared dividends and the same is denominated in INR. Who would bear the exchange risk on dividends paid to GDR holders?
    a.   Company
    b.   Depository
    c.   Custodian Bank
    d.   Investor

22. A pool of investment assets owned by a government is best described as:
    a.   state managed fund.
    b.   official reserve fund.
    c.   sovereign wealth fund

23. An Indian company is planning to set-up a plant in Sri Lanka. It needs to factor risks specific to international projects. Which is better approach to factor in risk?
    a.   Adjust discount rate
    b.   Adjust cash flows
    c.   Adjust both discount rate and cash flows
    d.   Indifferent between adjustment of discount rate/cash flows

24. Which type of Sovereign Wealth Fund (SWF) is established to save excess revenues for future generations and act as a stabilizing force for the economy?
    a.   Reserve Fund
    b.   Development Fund
    c.   Heritage Fund
    d.   Stabilization Fund

25. Which working capital component is most affected by cross-border currency fluctuations?
    a.   Inventory
    b.   Short-term investments
    c.   Accounts Receivable
    d.   Cash Reserves

26. An issuer of Euro Convertible bond has an option of calling (buying) the bonds for redemption before the date of maturity of the bonds. This is an example of
    a.   Call option
    b.   Put option

27. What is the difference between evaluating a project-based cash flows and parent firms cash flows?
    a. Evaluation based on parent firms cash flows requires competition with existing local firms.
    b. Evaluation based on parent firms cash flows involves financial cash flows only.
    c. Evaluation based on parent firms cash flows eliminates problems associated with fluctuating exchange rate changes.
    d. Evaluation based on parent firms cash flows involves operating and financial cash flows.

28. Which risk factor poses a specific challenge in international capital budgeting when compared to domestic capital budgeting?
    a. Interest rate risk
    b. Political risk
    c. Market demand risk
    d. Supplier reliability risk

29. _____ is raising funds in the form of large loans from banks with good credit rating
    a. Euro bonds
    b. Convertible bonds
    c. Syndicated bank loans
    d. Hypothecated bank loans

30. What is the primary source of funding for most Sovereign Wealth Funds (SWFs)?
    a. International grants and aid
    b. Foreign direct investment
    c. Export earnings from natural resources
    d. Domestic taxation

31. An exporter may decide to bill the receivables in a depreciating currency due to
    a. Exporters always aim for billing in depreciating currency
    b. Exporter has short term debt in depreciating currency
    c. Exporter has given longer credit period to customer
    d. Exporter is the market leader

32. Which of the following techniques does not help in optimizing cash flow movements in international cash management?
    a. Leading and Lagging
    b. Netting
    c. Management of Blocked Funds
    d. Taking a forward contract

33. Which factor contributes to the complexity of working capital management in multinational corporations?
    a. Homogeneous regulatory environments
    b. Uniform economic conditions across countries
    c. Consistent currency exchange rates
    d. Diverse tax and legal frameworks

34. Which of the following does not reduce forex risk?
    a. Payables & receivables in different currencies having positive correlations
    b. Payables of different currencies having negative correlations
    c. Payables and receivables in different currencies having negative correlations

35. Firms _____ payments of hard currency payables and _____ payments of soft currency payables in order to reduce foreign exchange exposure

a. Accelerate and Accelerate
b. Delay and Delay
c. Accelerate and Delay
d. Delay and Accelerate

Answer:

1.	Higher of home/host country tax rate			
2.	**Particulars**	**Calculation**	**Amount (in Crores)**	
	Profit before tax		**100.00**	
	Less: Tax @ 30%	100.00 x 30%	-30.00	
	Profit after tax		**70.00**	
	Less: Withholding tax @ 10%	70.00 x 10%	-7.00	
	Amount repatriated		**63.00**	
3.	A French company lists its shares on the New York Stock Exchange (NYSE)			
4.	**INR rate analysis:** $(1 + R_f)$ x $(1 + $ risk premium$) = (1 + $ risky rate$)$ $(1 + 0.08)$ x $(1 + $ risk premium$) = (1 + 0.12)$; Risk Premium = 3.71% **USD discount rate:** $(1 + R_f)$ x $(1 + $ risk premium$) = (1 + $ risky rate$)$ $(1 + 0.04)$ x $(1 + 0.0371) = (1 + 0.12)$; Risky Rate = 7.86%			
5.	Regulatory compliance			
6.	Interest cost = 10 million x 3.55% x 3.4 years = GBP 1.207 million			
7.	Effect of foreign exchange risk on the parent firm's cash flow **Explanation:** More or less first two options are based on third option. Changes in rates in inflation in parent country indirectly impacts the capital budgeting decision.			
8.	USD 30,00,000 **Explanation:** Blocked funds will be used for setting up the project and these blocked funds should be reduced from the initial outlay to find the real outflow towards the project			
9.	NPV in INR = NPV in USD x Spot rate 10,00,000 = NPV in USD x 50; NPV in USD = 10,00,000/50 = USD 20,000			
10.	Facilitating cross-border financial transactions			

11. **Computation of Asset Beta of project based on Competitor:**

Security	Beta	Weight	Product
Equity	1.35	1850	2,497.50
Debt	0	408 [510 x 0.80]	0
Firm	**1.106**	**2,258**	**2,497.50**

Note: We have used tax rate of Nepal for computing weight of debt in Nepal. This is because the competitor is based out of Nepal

Computation of Equity Beta:

Security	Beta	Weight	Product
Equity	1.83	0.55	1.006
Debt	0	0.36 [0.45 x 0.80]	0
Firm	**1.106**	**0.910**	**1.006**

Note: Weight for Debt is taken as Debt x (1 – Tax rate of India)
- **Final answer is 1.106 Times and 1.830 Times**

12.

Particulars	Calculation	Amount
Surplus in USD		1,00,00,000 USD
Euro investment	1,00,00,000 x 0.4040	40,40,000 EUR
Interest earned	40,40,000 x 5.95% x 6/12	1,20,190 EUR
Withholding tax as per DTAA	1,20,190 x 10% [DTAA or normal tax whichever Is lower]	12,109 EUR

13.	GDRs represent ownership in a foreign company and are traded on international stock exchanges, while ADRs represent ownership in a foreign company and are traded on U.S. stock exchanges
14.	• Current selling price is in USD and hence there will be no impact on selling price with decline in value of USD. Selling price will continue to be USD 10 • Depreciation is USD 1 million as per the current rate of exchange. Decline in value of USD will lead to lower equivalent depreciation of USD 0.9 million [1 million – 10%] • Hence answer is USD 10 and USD 0.9 million

15.

Particulars	Calculation	Amount (in Crores)
Profit before tax		**100.00**
Less: Withholding tax @ 10%	100.00 x 10%	-10.00
Earnings after withholding tax		**90.00**
Less: Tax @ 30%	100 x 30% - 10 (with-holding tax eligible for tax credit)	-20.00
Amount repatriated		**70.00**

16.

Year	Cash flow ('000s)	PVF @ 10%	DCF
0	-6,350	1.000	-6,350.00
1 to 5	900	3.791	3,411.90
5	6,000	0.621	3,726.00
NPV of bond refunding			**787.90**

• The company will have to pay 6,350 today for a bond refunding (6 million + 3,50,000)
• The company will save interest of 900 for a period of 5 years and will save principal payment of 6,000 at end of five years
• **NPV of bond refunding = USD 7,87,900**

17.

Year	Cash flow	PVF @ 10%	DCF
0	-80,00,000	1.000	-80,00,000
1	10,00,000	0.909	9,09,000
2	20,00,000	0.826	16,52,000
3	90,80,400	0.751	68,19,380
NPV			**13,80,380**

• Cash flow of year 1 = 20,00,000 x 50% = 10,00,000
• Cash flow of year 2 = 40,00,000 x 50% = 20,00,000
• Cash flow of year 3 = [10,00,000 x 1.02 x 1.02] + [20,00,000 x 1.02] + 60,00,000 = 90,80,400

18.	FCCBs can be converted into equity shares denominated in any foreign currency, while Euro Convertible Bonds can only be converted into Euro-denominated equity shares
19.	No restriction on transfer of funds from one country to another country
20.	USD 30 million. Project's share of allocated fixed cost is irrelevant as the same is not related to the project.
21.	Investor **Explanation:** Investors earn fixed income by way of dividends which are paid in issuer currency converted into dollars by depository and paid to investors and hence exchange risk is with investor
22.	A sovereign wealth fund is a pool of investment assets owned by a government
23.	Adjust cash flows **Explanation:** Adjusting cash flows is better than adjusting discount rate. Adjusting discount rate would not be proper as we are combining all risks into a single discount rate
24.	Stabilization Fund **Explanation:** Stabilization Funds are designed to mitigate economic volatility by saving excess revenues during periods of high resource prices and using them during periods of low prices.
25.	Accounts receivables **Explanation:** Cross-border currency fluctuations can impact the value of accounts receivable, affecting the value of payments received from foreign customers. This is primary component in balance sheet of most companies

26.	Call option. This is also known as issuer's option
27.	Evaluation based on parent firms cash flows involves operating and financial cash flows **Explanation:** In case of evaluation of foreign projects the actual cash remitted plays a big role
28.	Political risk
29.	Syndicated bank loans
30.	Export earnings from natural resources **Explanation:** Sovereign Wealth Funds often accumulate funds from excess revenues generated by the export of natural resources like oil, gas, minerals, etc
31.	Exporter has short term debt in depreciating currency **Explanation:** Exporter would normally bill in appreciating currency. However due to natural hedge (loan in foreign currency offset with receivables), they would be ok to do billing in depreciating currency.
32.	Taking a forward contract does not help in optimizing cash flows. It can help in reducing exchange rate risk. Other techniques help in optimizing cash flows
33.	Diverse tax and legal frameworks
34.	Payables and receivables in different currencies having negative correlations **Explanation:** A company cannot reduce risk by having payables and receivables in different currencies having negative correlation. This is because an appreciation of one currency (example: payable currency) will be leading to depreciation of other currency (receivable currency). Hence it would have either profits or losses in both transactions and hence this would not lead to risk reduction.
35.	Accelerate and Delay **Explanation:** Hard currency payables are payables in currencies which are likely to appreciate. Hence, we should make early payment. Soft currency payables are payables in currencies which are likely to depreciate. Hence, we should delay making those payments.

Chapter 12 – Interest rate risk Management

1. ABC Limited will receive Rs.50,00,000 in two months and the same should be deposited for a period of three months. Three-month futures are currently priced at 93 and the size of one contract is Rs.5,00,000. If after two months, the futures are priced at 90.75 and interest rate increases to 10.5%, what would be the effective interest income earned by ABC Limited due to adoption of this strategy?
   a. Rs.1,31,250
   b. Rs.1,59,375
   c. Rs.1,03,125
   d. Rs.5,25,000

2. Which economic condition is likely to lead to a decrease in interest costs for borrowers?
   a. High unemployment rate
   b. Rapid economic growth
   c. High consumer spending
   d. Rising inflation

3. In a plain vanilla interest rate swap:
   a. one party pays a floating rate and the other pays a fixed rate, both based on the notional amount
   b. each party pays a fixed rate of interest on a notional amount
   c. payments equal to the notional principal amount are exchanged at the initiation of the swap.

4. Firm A has invested Rs.100 million in fixed rate bonds yielding 8.5 percent. Firm A has raised its loan for funding its assets through floating rate loan from bank at an interest rate of LIBOR + 0.50%. There is a big bank which offers interest rate swap. It has quoted rate of 6.40%-6.50% against LIBOR. How much would be the locked in spread of Firm A if it enters into interest rate swap?
   a. 1.50%
   b. 1.60%
   c. 2.10%
   d. 2.00%

5. You have purchased one year cap on notional amount of Rs.100 crores. The strike rate of cap option is 8%. Interest rate for first quarter is 8.5% and second quarter is 7.5%. How much is the payoff for first and second quarter?
   a. 50,00,000 and 50,00,000
   b. 12,50,000 and 12,50,000
   c. 12,50,000 and 0
   d. 50,00,000 and 0

6. What does "basis risk" refer to in the context of interest rate risk?
   a. The risk of changes in the yield curve
   b. The risk of embedded options in bonds
   c. The risk of a mismatch between two related interest rates
   d. The risk of fluctuating market prices for fixed-income securities

7. _____ is that interest rate at which bank will charge from borrower, the _____ is that rate at which bank would like to borrow from another bank
   a. MIBID and MIBOR
   b. MIBOR and MIBID

8. M Limited and S Limited are looking at borrowing a loan and given below is the interest rate offered to them.

Particulars	Fixed rate	Floating rate	Preference

M Limited	8%	T+0.6%	Floating
S Limited	9.2%	T+1.2%	Fixed

There is no swap intermediary in the transaction. Swap gains will be shared equally between two parties. How much would be the effective borrowing rate of Madagascar Limited?

    a. T + 0.60%
    b. T + 0.90%
    c. T + 0.30%
    d. T

9. The treasurer of a company expects to receive a cash inflow of $15,000,000 in 90 days. The treasurer expects short-term interest rates to fall during the next 90 days. What action should he take in FRA to hedge interest rate risk?
    a. Take long position in FRA
    b. Take short position in FRA

10. Which type of interest rate risk is particularly relevant to callable bonds?
    a. Gap exposure risk
    b. Reinvestment risk
    c. Yield curve risk
    d. Embedded option risk

11. Three-month futures are currently quoted at 95. How much is the interest rate indicated by the futures?
    a. 95.00%
    b. 5.00%
    c. -5.00%
    d. 20.00%

12. ABC Limited has taken a floating rate loan. They have used interest rate swaps and converted the same into a fixed rate loan. What is the view of ABC Limited on interest rates?
    a. No view on interest rates
    b. Interest rates will increase
    c. Interest rates will decrease

13. Which technique provides protection against rising interest rates by allowing the holder to lock in a maximum interest rate while benefiting from lower rates?
    a. Interest Rate Swap
    b. Interest Rate Future
    c. Interest Rate Collar
    d. Interest Rate Cap

14. XYZ Limited borrows £15 Million of six months LIBOR + 10.00% for a period of 24 months. The company anticipates a rise in LIBOR, hence it proposes to buy a Cap Option from its Bankers at the strike rate of 8.00%. The lumpsum premium is 1.00% for the entire reset periods and the fixed rate of interest is 7.00% per annum. How much would be the amortized premium per reset period?
    a. GBP 1,50,000
    b. GBP 40,839
    c. GBP 37,500
    d. GBP 41,323

15. 3-month interest rate is 4.50% per annum and 6-month interest rate is 5.00% per annum. What should be the 3 months FRA rate at 3 months forward?
    a. 8.00%
    b. 1.36%

       c.   5.44%

       d.   2.72%

16. In an Interest Rate Swap, Fixed interest payments on a generic swap are calculated assuming each year consist of _____

       a.   366 days

       b.   365 days

       c.   360 days

17. You are planning to borrow Rs.100 crores after 3 months. Which of these actions can help in hedging interest rate risk?

       a.   Buy interest rate futures

       b.   Sell Interest Rate futures

18. Bank's interest-sensitive assets = Rs.100 Crores; Bank's interest sensitive liabilities = Rs.80 Crores. Interest rates will increase by 1%. How much is the impact on earnings of bank?

       a.   Increase in NII by Rs.1 crore

       b.   Decrease in NII by Rs.1 crore

       c.   Increase in NII by Rs.20 lacs

       d.   Decrease in NII by Rs.20 lacs

19. ABC Limited plans to borrow Rs.50 Crores for a period of 3 months after 6 months. The Bank has quoted FRA rate as follows:

3 x 6 FRA Rate	8.20%
3 x 9 FRA Rate	8.50%
6 x 9 FRA Rate	8.00%
6 x 12 FRA Rate	8.60%

The actual interest rate on borrowing date turns out to be 10.00%. How much would be the FRA Settlement?

       a.   Rs.25,00,000 (Receipt for ABC Limited)

       b.   Rs.24,39,024 (Receipt for ABC Limited)

       c.   Rs.25,00,000 (Payment by ABC Limited)

       d.   Rs.24,39,024 (Payment by ABC Limited)

20. An interest rate swap where the payments are based on the difference between two different variable rates is called as _____

       a.   Generic swap

       b.   Plain vanilla swap

       c.   Basis rate swap

       d.   Asset swap

21. Secured Overnight Financing Rate (SOFR) is the reference rate of which region?

       a.   Europe

       b.   UK

       c.   USA

       d.   Japan

22. The 6-month and 12-month LIBOR is 9.60% per annum and 9% per annum. Fair FRA rate for month 6 to 12 is 8.00% per annum and actual FRA rate for month 6 to 12 is 10.50%-11.00%. How can you exploit the arbitrage opportunity?

       a.   Borrow for 12 months at 9% per annum and invest for 6 months at 9.60% and balance 6 months at actual FRA rate of 11.00%

       b.   Borrow for 12 months at 9% per annum and invest for 6 months at 9.60% and balance 6 months at actual FRA rate of 10.50%

c. Invest for 12 months at 9% per annum and borrow for 6 months at 9.60% and balance 6 months at actual FRA rate of 11.00%

d. Invest for 12 months at 9% per annum and borrow for 6 months at 9.60% and balance 6 months at actual FRA rate of 10.50%

23. XYZ Limited issues a GBP 10 million floating rate loan with resetting of coupon rate every 6 months equal to LIBOR + 0.50%. XYZ is interested in a collar strategy by selling a floor and buying a cap. Strike rate for cap is 7.00% and collar is 4%. How much is the effective interest cost if LIBOR is 3% on reset date?
    a. GBP 3,50,000
    b. GBP 1,75,000
    c. GBP 4,50,000
    d. GBP 2,25,000

24. You have purchased one year floor on notional amount of Rs.100 crores. The strike rate of floor option is 8%. Interest rate for first quarter is 8.5% and second quarter is 7.5%. How much is the payoff for first and second quarter?
    a. 50,00,000 and 50,00,000
    b. 12,50,000 and 12,50,000
    c. 0 and 50,00,000
    d. 0 and 12,50,000

25. Which interest rate option provides the holder with the right, but not the obligation, to enter into an interest rate swap at a future date?
    a. Call Option
    b. Put Option
    c. Caps Option
    d. Swaption

26. Fixed rate payer swaption is also called as _____
    a. Put swaption
    b. Call swaption

27. Which financial instrument allows a company to exchange fixed-rate payments for floating-rate payments without exchanging the underlying principal amounts?
    a. Forward Rate Agreement (FRA)
    b. Interest Rate Swap
    c. Interest Rate Option
    d. Interest Rate Future

28. In March 2020, XYZ Bank sold some 7% Interest Rate Futures underlying Notional 7.50% Coupon Bonds. 6.80 GOI 2029 is an eligible security whose quoted price is 877.50 and conversion factor is 0.9195. Futures settlement price is 1,000. How much is the profit/loss of XYZ Bank?
    a. Rs.122.50 (Profit)
    b. Rs.42.00 (Profit)
    c. Rs.122.50 (Loss)
    d. Rs.42.00 (Loss)

29. Suppose a dealer quotes 'All-in-cost' for a generic swap at 8% against six months LIBOR flat. If the notional principal amount of swap is Rs.50,00,000. The six-month period from the effective date of swap to the settlement date comprise of 181 days and that the corresponding LIBOR was 6% on the effective date of swap. Generic swap is valued based on 30/360 days basis. How much is the semi-annual fixed payment and floating payment?
    a. Rs.4,00,000 and 3,00,000

b. Rs.3,00,000 and 1,50,000
c. Rs.2,00,000 and 1,50,833
d. Rs.1,50,000 and 3,01,666

30. A swaption with a longer time to expiration is likely to have a higher premium because:
   a. It is less risky
   b. It has a higher notional amount
   c. There is greater uncertainty in future interest rates
   d. It can only be exercised on specific dates

31. Which swaption can help an investor to protect against the risk of callable bonds?
   a. Fixed rate payer swaption
   b. Fixed rate receiver swaption

32. XYZ Limited issues a GBP 10 million floating rate loan with resetting of coupon rate every 6 months equal to LIBOR + 0.50%. XYZ is interested in a collar strategy by selling a floor and buying a cap. Strike rate for cap is 7.00% and collar is 4%. How much is the cap receipt and floor payment if Libor is 10% on reset date?
   a. Cap receipt of GBP 3,00,000 and floor payment of GBP 6,00,000
   b. Cap receipt of GBP 3,00,000 and no floor payment
   c. Cap receipt of GBP 1,50,000 and floor payment of GBP 3,00,000
   d. Cap receipt of GBP 1,50,000 and no floor payment

33. An amortising swap is a derivative contract where:
   a. Both parties exchange fixed interest rates
   b. Fixed interest rate is exchanged for a floating interest rate
   c. Notional amount decreases over time
   d. Parties exchange interest payments without underlying assets

34. Which type of interest rate risk is associated with the potential for changes in market interest rates to affect the value of a fixed-rate bond?
   a. Basis risk
   b. Reinvestment risk
   c. Embedded option risk
   d. Price risk

35. ABC Limited wants to borrow Rs.30 lacs for a period of 5 months after 2 months. Three-month futures are currently quoted at 93 and value of one contract is 5 lacs. How many contracts are needed for hedging?
   a. Buy 6 contracts
   b. Sell 6 contracts
   c. Buy 10 contracts
   d. Sell 10 contracts

36. Which interest rate management technique involves combining an interest rate cap and an interest rate floor?
   a. Interest Rate Swap
   b. Interest Rate Collar
   c. Forward Rate Agreement (FRA)
   d. Interest Rate Option

Answer:

1.	No of contracts $= \dfrac{50,00,000}{5,00,000} = 10$ Contracts

Futures settlement:

Date	Position	Action	Ref date	Rate
Day 0	Original	Lend	Day 60	7.00% [100 – 93]
Day 60	Opposite	Borrow	Day 60	-9.25% [100 – 90.75]
Loss in %				-2.25%
Loss in rupees (5,00,000 x 10 x 2.25% x 3/12)				-28,125

Effective interest income:

Particulars	Calculation	Amount
Interest income	50,00,000 x 10.5% x (3/12)	1,31,250
Loss in futures		-28,125
Effective interest income		**1,03,125**

No.	Content
2.	High Unemployment rate
3.	one party pays a floating rate and the other pays a fixed rate, both based on the notional amount
4.	

Particulars	Amount
Investment rate	8.5%
Borrowing Rate	(LIBOR + 0.50%)
Firm to Big Bank	(6.5%)
Big Bank to Firm	LIBOR
Locked in spread	**1.50%**

The company can lock in spread by receiving LIBOR from Big Bank. This will help them in offsetting the floating LIBOR being paid by them. Big Bank will pay LIBOR to Firm A and against higher rate of 6.50% from Firm A.

No.	Content
5.	Option will get exercised in the first quarter as the actual interest is higher than cap rate. Payoff of first quarter = 100 crores x 0.5% x 3/12 = Rs.12,50,000. Option will not be exercised in second quarter and hence payoff for second quarter is 0
6.	The risk of a mismatch between two related interest rates **Explanation:** Basis risk is the risk that the relationship between two interest rates, such as the benchmark rate and a floating rate, may deviate and create uncertainties for hedging or financial instruments.
7.	MIBOR and MIBID
8.	• Total interest rate of combination 1 [M limited (fixed) & S Limited (Floating)] = 8% + T + 1.2% = T+9.2% • Total interest rate of combination 2 [M limited (floating) & S Limited (fixed)] = T + 0.6% + 9.2% = T+9.8% • Ideal combination = Combination 1; This would mean that M Limited should borrow at fixed rate and S Limited should borrow at floating rate • **Actual scenario:** M Limited plans to borrow at floating rate and S Limited plans to borrow at fixed rate • Scope for Interest rate swap exist as the ideal and actual scenario does not match • Swap gain = Difference in total interest of combination 1 & 2 = (T + 9.8%) – (T + 9.2%) = 0.6% • Share of Gain for M Limited = 0.6/2 = 0.3% • **Effective borrowing rate = T + 0.6% - 0.3% = T + 0.3%**
9.	The company needs to invest money and hence they should take a short position in FRA. **Note:** FRA should not be confused with IRF. In case of FRA we buy FRA if we are borrowing and sell FRA if we are investing. On the contrary the action taken is buy IRF if we are investors and sell IRF if we are borrowers.
10.	Embedded option risk **Explanation:** Callable bonds have embedded options that allow the issuer to call (redeem) the bond before maturity. This introduces embedded option risk, as changes in interest rates may impact the issuer's decision to call the bond
11.	Futures of 95 would mean interest rate of 5.00% (100 – 95)

12.	A company will convert a floating loan into fixed loan if they expect interest rates to increase. Conversion of loan will ensure that they are not affected by increase in interest rates
13.	Interest Rate Cap
14.	Lump-sum Premium = 1,50,00,000 x 1% = GBP 1,50,000 $$\text{Premium per reset period} = \frac{\text{Total premium}}{\text{PVAF (r, n)}} = \frac{1,50,000}{\text{PVAF (3.5\%, 4)}} = \frac{1,50,000}{3.673} = 40,839$$ **Note:** • Premium will be amortized based on the fixed rate of interest. Fixed rate of interest is 7% per annum and the same will be 3.5% per half-year (reset period). Reset period is taken as six months as the borrowing is at six-month LIBOR • Option is for a period of 24 months and hence the same will have 4 reset periods of 6 months
15.	The company wants 3 months FRA rate at 3 months forward. This would technically mean 3x6 FRA $$3\text{x}6\ \text{FRA} = \frac{\text{Future value factor for 6 months}}{\text{Future value factor for 3 months}} - 1$$ $$3\text{x}6\ \text{FRA} = \frac{1 + 2.50\%}{1 + 1.125\%} - 1 = 1.0136 - 1 = 1.36\% \text{ per 3 months (or)} \textbf{5.44\% per annum}$$
16.	360 days
17.	A borrower has to sell interest rate futures whereas lender would buy interest rate futures
18.	Gap exposure = 100 crores – 80 crores = Rs.20 crores (Positive gap) Interest rates have increased by 1 percent and this would lead to improvement in net interest income of Rs.20 lacs (20 crores x 1%)
19.	The company plans to borrow for 3 months after a period of six months. Hence the borrowing period is month 6 to month 9 and hence ABC Limited would have entered into 6X9 FRA (8.00%) for hedging. Interest rates have increased to 10.00% and hence ABC Limited will receive FRA settlement $$\text{FRA Settlement receipt} = \frac{50 \text{ crores x 2\% x} \frac{3}{12}}{1 + \left(\frac{0.10}{4}\right)} = \text{Rs. } 24,39,024$$
20.	Basis Rate Swap
21.	USA
22.	Fair FRA rate is 8.00%. This would mean that arbitrage is possible if we can borrow at rate lower than 8.00% (or) invest at rate higher than 8.00%. In this case we will be able to invest at FRA rate of 10.50%. Hence Arbitrage is possible by doing the following: **Borrow for 12 months at 9% per annum and invest for 6 months at 9.60% and balance 6 months at actual FRA rate of 10.50%**
23.	• Interest paid on base loan = 1,00,00,000 x 3.5% x 6/12 = GBP 1,75,000 • No receipt on cap option as the same would not be exercised • Floor payment = 1,00,00,000 x 1% x 6/12 = GBP 50,000 • Total outflow = 1,75,000 – 0 + 50,000 = GBP 2,25,000
24.	Option will not get exercised in the first quarter as the actual interest is higher than floor rate. Hence payoff for first quarter is 0. Option will be exercised in second quarter as the actual rate is lower than strike rate. Payoff for second quarter is 12,50,000 [100 crores x 0.5% x 3/12]
25.	Swaption
26.	Call swaption
27.	Interest Rate Swap
28.	We have sold 7.50% coupon bonds but are not able to deliver the same. Hence futures settlement price will be adjusted based on conversion factor. Final inflow for XYZ Bank = 1,000 x 0.9195 = Rs.919.50. Outflow to buy 6.80 GOI 2029 is 877.50 and hence net profit of XYZ Bank = 919.50 – 877.50 = Rs.42.00
29.	$$\text{Semi} - \text{annual fixed payment} = 50,00,000 \text{ x } 8\% \text{ x} \left(\frac{1}{2}\right) = 2,00,000$$ $$\text{Floating payment} = 50,00,000 \text{ x } 6\% \text{ x} \left(\frac{181}{360}\right) = 1,50,833$$
30.	There is greater uncertainty in future interest rates
31.	Fixed rate receiver swaption

	Explanation: A bond could be redeemed by the company if interest rates decline in economy as they would plan to issue new bonds at lower interest. If this happens, then a fixed rate receiver swaption will help the investor as they can enter into IRS where they would receive fixed rate and pay floating rate (lower rate). This would compensate them for the reduction in interest rate	
32.	Strike rate of cap option is 7% and actual LIBOR is more than 7%. Hence cap option will be exercised and there will be a receipt of GBP 1,50,000 [1,00,00,000 x 3% x 6/12]. There will be no payment on floor option as the same won't be exercised	
33.	Notional amount decreases over time	
34.	Price risk, also known as market risk, refers to the risk that changes in market interest rates can lead to fluctuations in the value of fixed-rate securities such as bonds	
35.	ABC Limited wants to borrow and hence they should sell interest rate futures No of contracts $= \dfrac{30 \text{ lacs}}{5 \text{ lacs}} \times \dfrac{5}{3} = 10$ Contracts Hence, we should sell 10 contracts for hedging	
36.	Interest Rate Collar	

Chapter 13 – Business Valuation

1. Market capitalization of firm = 10,000 lacs; Book value of equity = 4,000 lacs; Book value of debt = 2,000 lacs. How much is market value added?
   a. 4,000 lacs
   b. 6,000 lacs
   c. 2,000 lacs
   d. 16,000 lacs

2. Total Assets of the company = Rs.25,00,000; P&L debit balance (part of total assets) = Rs.5,00,000; Sundry creditors = Rs.2,00,000; Short-term debt = Rs.1,00,000; Long-term debt = Rs.2,00,000; Preference capital = Rs.4,00,000; No of equity shares = 1,00,000. How much is the net asset value per share?
   a. Rs.16.00
   b. Rs.11.00
   c. Rs.15.00
   d. Rs.20.00

3. Which of the following valuation methods is least dependent on future earnings or cash flows?
   a. Discounted Cash Flow (DCF) Analysis
   b. Comparable Transaction Analysis
   c. Dividend Discount Model (DDM)
   d. Price-to-Earnings (P/E) Ratio Method

4. In the Berkus Method of startup valuation, what is the purpose of assigning a value to each key risk factor?
   a. To determine the startup's current market value
   b. To estimate the startup's future earnings potential
   c. To assess the management team's capabilities
   d. To calculate the startup's total assets

5. Opening value of investment = Rs.1,00,000. You had made additional investment of Rs.20,000 during the year and ending value of investment is Rs.1,50,000. How much is the return on investment?
   a. 50.00%
   b. 30.00%
   c. 27.27%
   d. 25.00%

6. EBIT = Rs.200 lacs; The company has 10% debt of Rs.1,500 lacs. PAT is Rs.30 lacs. How much is the tax rate?
   a. 15.00%
   b. 85.00%
   c. 60.00%
   d. 40.00%

7. Equity share capital = Rs.10,00,000 (1,00,000 shares of Rs.10); Reserves and surplus = Rs.40,00,000; Share is quoted in the market at Rs.80. How much is market value added?
   a. 70,00,000
   b. 30,00,000
   c. 1,30,00,000
   d. 40,00,000

8. What should be the value of C Limited based on Market to sales approach? Company A - Market value = 400; Sales = 500; Company B - Market value = 450; sales = 600; Sales of Company C = 800

     a. 620
     b. 640
     c. 600
     d. 680

9. Company A has Debt/Assets ratio of 0.80 Times whereas company B has Debt/Assets ratio of 0.20 Times. Both companies are identical except for capital structure. Industry PE Multiple is 15 Times. What should be the likely PE Multiple of Company A and Company P?
     a. Both companies can have same PE Multiple
     b. PE Multiple of A Limited will be higher than PE Multiple of B Limited
     c. PE Multiple of B Limited will be higher than PE Multiple of A Limited

10. Revenues of the company = 4,000 lacs. Working capital is 25 percent of revenues. Revenues will increase by 20 percent for 2 years and thereafter by 10 percent from third year. What is the change in working capital for year 3?
     a. 200 lacs
     b. 144 lacs
     c. 264 lacs
     d. 120 lacs

11. EBIT of Year 1 = 200 lacs; Interest of Year 1 = 40 lacs; Tax rate = 30%; Depreciation of year 1 = 20 lacs; Capital expenditure of year 1 is 40 lacs and year 2 is 50 lacs; Decrease in working capital in year 1 is 20 lacs. Capital expenditure is incurred at the start of the year. How much is the FCFF of year 1?
     a. 140 lacs
     b. 130 lacs
     c. 90 lacs
     d. 100 lacs

12. Which value driver for startups refers to the ability of the company to demonstrate increasing interest and adoption of its product or service among its target audience?
     a. Management
     b. Traction
     c. Revenue
     d. Competitiveness

13. A Limited plans to acquire B Limited. Both are into same industry. B Limited earned a profit of Rs.13,00,000 in last year and had depreciation of Rs.6,00,000. B Limited is no longer required to maintain its own production facilities and hence it can be assumed that only a minimal amount of cash will have to be reinvested to keep its equipment current and for future growth. This amount is estimated at Rs. 1,00,000 per year. The acquisition has synergy gain (post-tax) of Rs.6,00,000. Determine the annual cash flow expected by A Limited from B Limited if the acquisition is made
     a. Rs.19,00,000
     b. Rs.18,00,000
     c. Rs.25,00,000
     d. Rs.24,00,000

14. What does the term "Terminal Value" refer to in a Discounted Cash Flow (DCF) Analysis?
     a. The final year of projected cash flows
     b. The present value of historical earnings
     c. The residual value of a company beyond the forecast period
     d. The sum of all future cash flows

15. Which of the following statements is true regarding the Scorecard Valuation Method of valuing startups?
    a. It relies solely on projected cash flows to estimate valuation.
    b. It assigns equal weights to all startup characteristics.
    c. It is primarily used for established and mature startups.
    d. It provides a structured framework for assessing startup value.

16. Opening fixed assets = 10,000 lacs. Revenues will increase by 20 percent and fixed asset turnover ratio is maintained. The depreciation is 10% of opening WDV. How much is the gross capital expenditure of the year?
    a. 2,000 lacs
    b. 1,000 lacs
    c. 3,000 lacs

17. Value of firm is arrived by discounting _____ at _____ whereas value of equity is arrived by discounting _____ at _____.
    a. FCFF, Cost of equity, FCFE and cost of capital
    b. FCFF, cost of capital, FCFE and cost of equity
    c. FCFE, cost of equity, FCFF and cost of capital
    d. FCFE, cost of capital and FCFF and cost of equity

18. Which method values the company on the basis of historical costs?
    a. Net realizable value method
    b. Replaceable value method
    c. Net assets value method

19. H Limited has total assets of Rs.1,000 Crores. It has preference capital of Rs.100 crores, Long-term debt of Rs.200 crores and current liabilities of Rs.300 crores. Contingent liability of Rs.200 crores is likely to crystallize to the extent of 25%. Land is 20% of total assets and its current value is 4 times of book value. How much is the value of equity as per net assets method?
    a. Rs.400 crores
    b. Rs.350 crores
    c. Rs.950 Crores
    d. Rs.1,000 Crores

20. Value of acquiring company before merger = 4,000 lacs; Value of acquiring company after merger = 10,000 lacs; Pre-merger no of Shares in both companies are same. The company has allotted 0.5 share for every 1 share of target company. How much is the purchase consideration paid?
    a. 5,000 lacs
    b. 3,333 lacs
    c. 2,000 lacs
    d. 1,333 lacs

21. A company has total assets of Rs.20,00,000 and outside liabilities of Rs.4,00,000. Assets have realizable value equivalent to 80% of the book value and there will also be liquidation expenses of Rs.1,00,000. How much is the net realizable value per share?
    a. Rs.16.00 per share
    b. Rs.15.00 per share
    c. Rs.12.00 per share
    d. Rs.11.00 per share

22. R Limited and S Limited are operating in same industry. S Limited is planning to acquire R Limited. How much should be the maximum consideration payable?

Particulars	R Limited	S Limited	Combined Entity
Profit after tax	86,50,000	49,72,000	1,21,85,000
Residual net cash flows per year	90,10,000	54,87,000	1,85,00,000
Required return on equity	13.75%	13.05%	12.50%

    a. Rs.14.80 crores
    b. Rs.10.60 crores
    c. Rs.8.25 crores
    d. Rs.6.55 crores

23. Which limitation of the Replacement Cost Method makes it less suitable for valuing startups?
    a. Replacement Cost Method does not consider a startup's liabilities.
    b. Startups often have unique and irreplaceable assets.
    c. Replacement Cost Method is more suitable for service-based startups.
    d. Startups do not have any fixed assets to evaluate.

24. Fragrance Ltd. has reported a Net Operating Profit after Tax (NOPAT) to Capital Employed as 2.5% plus Weighted Average Cost of Capital (WACC) for the year 31st March 2021. Economic Value added is Rs. 4 crore as on 31st March 2021. How much is the NOPAT if WACC is 7.5%?
    a. Rs.12 crores
    b. Rs.8 crores
    c. Rs.16 crores
    d. Rs.40 crores

25. Value of Going Concern = Rs.100 Crores. Distress value = Rs.50 Crores. The probability of survival is 40%. How much is the fair value of the company?
    a. Rs.150 Crores
    b. Rs.75 Crores
    c. Rs.70 crores
    d. Rs.80 crores

26. How does a company's strong commitment to environmental sustainability (ESG) typically impact its valuation?
    a. It has no impact on valuation as ESG is not financially relevant
    b. It leads to a lower valuation due to increased operating costs.
    c. It positively impacts valuation by attracting socially responsible investors and reducing risk.
    d. It negatively impacts valuation by limiting growth opportunities.

27. Reliance Limited has three Divisions. Division A is to be valued based on capitalization/sales, Division B is to be valued based on capitalization/EBITDA and Division C is to be valued based on capitalization/operating income. Data of three division is as under:

Particulars	Division A	Division B	Division C
Sales	4,00,000	5,00,000	6,00,000
EBITDA	2,00,000	1,50,000	2,00,000
Operating income	1,00,000	1,20,000	1,50,000

Capitalization/sales multiple for industry is 10 times, Capitalization/EBITDA multiple for industry is 20 times and capitalization/operating income for industry is 25 times. How much is the fair value of Reliance Limited?
    a. 1,50,00,000
    b. 1,10,00,000
    c. 1,20,00,000
    d. 92,50,000

28. ABC Limited has automobile division whose value of business is Rs.1,000 Crores. It has liabilities of Rs.500 Crores. The settlement value of liabilities is 20% more than book value. The company plans

to sell this division and has received a quote of Rs.450 Crores to acquire the division. The buyer of the division will take over all liabilities. What should be the decision of ABC Limited?

    a. It can sell automobile division
    b. It should not sell automobile division

29. A Limited has acquired business of B Limited. It has issued 40,000 equity shares at Rs.20 each. It has issued 12% debentures of Rs.4,00,000 to debenture holders. It has made payment of Rs.6,00,000 to creditors. How much is the initial outflow for the purpose of computing merger NPV?

    a. 8,00,000
    b. 6,00,000
    c. 12,00,000
    d. 18,00,000

30. Eagle Limited reported a profit of Rs.77 lacs after 30% tax for the financial year 2011-12. An analysis of the accounts revealed that the income included extraordinary items of Rs.8 lacs and an extraordinary loss of Rs.10 lacs. New product will lead to profit of Rs.28 lacs. How much is the future maintainable PAT?

    a. Rs.140 lacs
    b. Rs.98 lacs
    c. Rs.107 lacs
    d. Rs.136 lacs

31. EPS = Rs.10 per share; Capital expenditure = Rs.5 per share; Depreciation = Rs.4 per share; Working capital = Rs.4 per share. Debt ratio = 30%. How much is FCFF per share?

    a. 10 per share
    b. 5 per share
    c. 7.2 per share
    d. 8 per share

32. Compute the value of company under capitalization of earning method using the following information: EPS = Rs.10.00 per share; Share price = Rs.100 per share; Expected annual maintainable profit = Rs.20,00,000

    a. Rs.2,00,000
    b. Rs.2,00,00,000
    c. Rs.20,00,000
    d. Rs.20,00,00,000

33. In the Venture Capital Method, the "exit multiple" is typically based on:

    a. The startup's current revenue
    b. The average industry growth rate
    c. Comparable public company valuations
    d. The cost of capital

34. A manufacturing company with underutilized factory space and outdated equipment is best valued using which method?

    a. Realizable value method
    b. Capitalization of Earnings Method
    c. Cash Flow Based Approach
    d. Relative Company Valuation

35. Value of firm arrived by discounting cash flows of core operations = Rs.1,000 lacs; Value of debt = Rs.200 lacs; Market value of non-core assets = Rs.100 lacs. How much is the intrinsic value of equity?

    a. Rs.900 lacs

    b. Rs.700 lacs

    c. Rs.800 lacs

    d. Rs.1,100 lacs

36. PAT = 10,000 lacs; Interest paid = 4,000 lacs; Tax rate = 40%; Capital expenditure is offset by depreciation and there is no change in working capital. Debt repayment = 2,000 lacs. How much is FCFE?

    a. 8,000 lacs

    b. 10,000 lacs

    c. 12,400 lacs

    d. 10,400 lacs

37. Existing PAT of company = 10,00,000; Tax rate = 50%; Extraordinary income included in profit computation = 5,00,000; Profit of new product = 20,00,000; How much is the future maintainable profit after tax?

    a. 20,00,000

    b. 22,50,000

    c. 17,50,000

    d. 15,00,000

38. The founders of a small technology firm are seeking a $3 million venture capital investment from prospective investors. The founders project that their firm could be sold for $25 million in 4 years. The private equity investors deem a discount rate of 25% to be appropriate, but believe there is a 20% chance of failure in any year. The adjusted pre-money valuation (PRE) of the technology firm is closest to (in millions):

    a. 7.24 million

    b. 1.19 million

    c. 4.19 million

    d. 7.19 million

39. Which valuation method is most appropriate for a startup company that has not yet generated consistent earnings but has a disruptive technology?

    a. Net Realizable Value Method

    b. Replaceable Value Method

    c. Cash Flow Based Approach

    d. Relative Company Valuation

40. ABC Limited is currently going through financial distress. Value of ABC Limited (if it was unlevered) = Rs.100 crores; Amount of debt = Rs.50 crores; Tax rate = 30%; Distress sale value = Rs.40 crores; Probability of distress = 40%. How much is the fair value of equity of ABC Limited using APV approach?

    a. Rs.91 crores

    b. Rs.41 crores

    c. Rs.76 crores

    d. Rs.26 crores

41. A Limited made a gross profit of Rs.10,00,000 and incurred indirect expenses of Rs.4,00,000. The number of issued equity shares is 1,00,000. The company has a debt of Rs.3,00,000 and Reserves to the tune of Rs.5,00,000. Capitalization rate is 11.25%. Compute the per share earning value of company?

    a. Rs.53.33 per share

    b. Rs.50.33 per share

    c. Rs.55.33 per share

    d. Rs.6.00 per share

42. The cost of equity is 20 percent and cost of debt is 10 percent. WACC based on book value weights is 12 percent. The value of equity is thrice its book value, whereas the market value of its debt is nine-tenths of its book value. What is WACC based on market value weights?
    a. 12 percent
    b. 15 percent
    c. 14.55 percent
    d. 16 percent

43. Earning after tax = Rs.600 lacs; One-time incomes after tax = Rs.200 lacs; One-time expenses = Rs.100 lacs; Depreciation = Rs.50 lacs. How much is the free cash flow for valuation under cash flow-based approach of valuation?
    a. Rs.650 lacs
    b. Rs.450 lacs
    c. Rs.550 lacs
    d. Rs.750 lacs

44. Current market capitalization of company = 40,00,000. Promoters hold 40 percent of the company. No of shares of the company = 1,00,000. Promoters and their family members are part of top management and are currently over-paid. They had received excess remuneration of Rs.2,00,000 per year and the present value of these remuneration for infinite period is Rs.15,00,000. How much should be the minimum price per share paid by target company for the promoters to relinquish their controlling interest?
    a. Rs.40 per share
    b. Rs.45 per share
    c. Rs.77.50 per share
    d. Rs.80.00 per share

45. When using the Venture Capital Method, which factor contributes to a higher valuation for the startup?
    a. Higher risk associated with the startup's industry
    b. Lower expected future earnings
    c. Longer time to exit
    d. Higher projected exit multiple

46. In a rapidly changing industry with significant technological advancements, which valuation method is likely to be less reliable due to difficulties in accurately estimating future cash flows?
    a. Net Asset Value Method
    b. Net Realizable Value Method
    c. Replaceable Value Method
    d. PE Ratio Method

47. Enterprise value = Rs.40,00,000; Value of debt = Rs.10,00,000; Value of cash and cash equivalents = Rs.5,00,000. How much is the value of equity?
    a. 45,00,000
    b. 35,00,000
    c. 55,00,000
    d. 25,00,000

48. T Ltd. Recently made a profit of Rs. 50 crore and paid out Rs. 40 crore (slightly higher than the average paid in the industry to which it pertains). The average PE ratio of this industry is 9. As per Balance Sheet of T Ltd., the shareholder's fund is Rs. 225 crore and number of shares is 10 crore. In case company is liquidated, building would fetch Rs. 100 crore more than book value and stock would realize Rs. 25 crore less. What would be the value of company as per Net realizable value method?

    a.   Rs.225 Crores
    b.   Rs.350 Crores
    c.   Rs.325 Crores
    d.   Rs.300 Crores

49. Total assets = 4,000 lacs; Current liabilities = 1,000 lacs; Revenues of the company will grow at 20 percent. How much would be the overall funding requirement to finance growth?
    a.   800 lacs
    b.   1,000 lacs
    c.   600 lacs
    d.   1,200 lacs

50. A private equity investor makes a $5 million investment in a venture capital firm today. The investor expects to sell the firm in four years. He believes there are three equally possible scenarios at termination:
Expected earnings will be $20 million, and the expected P/E will be 10.
Expected earnings will be $7 million, and the expected P/E will be 6
Expected earnings will be zero if the firm fails.
The investor believes an IRR of 25% is appropriate. The expected terminal value and the investor's pre-money valuation, respectively, are closest to (in $ million):
    a.   80.67 and 33.04
    b.   80.67 and 28.04
    c.   9.00 and 3.67
    d.   80.67 and 38.04

51. Which of the following reasons makes the Discounted Cash Flow (DCF) method less suitable for valuing startups?
    a.   DCF method assumes stable and predictable cash flows.
    b.   DCF method does not consider a startup's risk profile.
    c.   Startups often have negative cash flows in their early stages.
    d.   DCF method is only applicable to small businesses.

52. Monika is trying to value ChatApp, a Chat messaging app that currently has 16 million users but does not generate any revenues. She has identified that WhatsApp was recently valued at USD 450 Billion while having 450 million users. Considering the difference in size, Monika believes that a size discount of 95 percent should be applied while valuing ChatApp.
    a.   USD 800 million
    b.   USD 16 Billion
    c.   USD 15.2 Billion
    d.   USD 450 Billion

53. Financial Leverage = 3 Times; The company has 11% debentures of Rs.400 lacs. How much is the EBIT of the company?
    a.   44 lacs
    b.   132 lacs
    c.   66 lacs
    d.   88 lacs

54. Book value of equity capital = 200 lacs; Reserves and surplus = 400 lacs; Amount of debt = 150 lacs. Face value of each share is Rs.10 and MPS is Rs.50. How much is market value added?
    a.   750 lacs
    b.   400 lacs
    c.   800 lacs
    d.   650 lacs

55. Pre-tax cost of debt = 12%; Cost of equity = 16%; Debt/assets ratio = 0.4 Times. Compute WACC if tax rate is 25%?
    a. 14.40 percent
    b. 13.20 percent
    c. 14.86 percent
    d. 14 percent

56. Book value of assets = 2,000 lacs; Replacement cost of assets = 6,000 lacs. What is capital employed for the purpose of EVA computation?
    a. 6,000 lacs
    b. 2,000 lacs
    c. 4,000 lacs

57. Which parameter can help in assessing the performance of the management of the company?
    a. EPS
    b. MPS
    c. EVA

58. The company reported EBIT of 2,000 lacs. The same has been after writing off training expense of 500 lacs. The benefit of training will be there for five years. What is the adjusted EBIT for computing EVA?
    a. 2000 lacs
    b. 2500 lacs
    c. 2400 lacs
    d. 1900 lacs

59. The company has reported EVA of Rs.20,00,000 and has 5,00,000 equity shares. How much the company can declare as dividend per share before the value of the company would start to decrease?
    a. Company cannot declare any extra dividend
    b. Rs.2 per share
    c. Rs.8 per share
    d. Rs.4 per share

60. What is the major issue in valuation of start-up?
    a. Non-availability of historical data for doing valuation
    b. Most of the start-ups are not having positive cash flows
    c. Unique value driver for each start-up
    d. All of the above

61. A private equity firm is guaranteed to receive 80% of the residual value of a leveraged buyout investment, with the remaining 20% owing to management. The initial investment is Rs.500 crores, and the deal is financed with 70% debt and 30% equity. The projected multiple is 2.0. The equity component consists of: Rs.120 crores preference shares. Rs.25 crores private equity firm equity and Rs.5 crores management equity.
    At exit in 5 years the value of debt is Rs.150 crores and the value of preference shares is Rs.300 crores. The payoff multiple for the private equity firm and for management, respectively, is closest to:
    a. 3.03 and 11
    b. 6.34 and 46
    c. 4.23 and 24
    d. 5.10 and 22

62. Pre-tax cost of debt = 12%; Cost of equity = 16%; Debt/equity ratio = 0.4 Times. Compute WACC if tax rate is 25%?
    a. 14.40 percent
    b. 13.20 percent
    c. 14 percent
    d. 14.86 percent

63. Which of the following statements is true regarding the concept of going concern and non-going concern valuations?
    a. Going concern valuation ignores the company's intangible assets.
    b. Non-going concern valuation places more emphasis on the company's current liabilities
    c. Generally, the going-concern value of a firm will be greater than non-going concern value

64. The company has equity share capital of Rs.100 lacs. It has debt of Rs.200 lacs. The company has patent of Rs.100 which is not recorded in books. Cost of debt after tax is 8% and cost of equity is 14%. how much is WACC?
    a. 11%
    b. 14%
    c. 10%
    d. 8%

65. When comparing valuation multiples of companies, which of the following factors should be taken into consideration to ensure accurate relative valuation analysis?
    a. Size of the target company's board of directors
    b. Market capitalization of the benchmark index
    c. Industry-specific characteristics and trends
    d. Number of patents held by the target company

66. Current invested capital = Rs.80,00,000. Present value of future EVA = Rs.1,20,00,000. What is the value of the firm?
    a. 80 lacs
    b. 120 lacs
    c. 200 lacs
    d. 40 lacs

67. Value of EBIT = 2,000 lacs; Tax Rate = 40%; Capital employed = 8,000 lacs; WACC = 10%.; How much is EVA?
    a. 2000 lacs
    b. 800 lacs
    c. 400 lacs
    d. 1200 lacs

68. A private equity firm is considering an investment of Rs.17 crores in ABC Limited. ABC Limited's owners firmly believe that with PE investment they could develop their "wonder" drug and sell the firm in six years for Rs.120 crores. Given the project's risk, P&H believes a discount rate of 30% is reasonable. The pre-money valuation and PE's ownership is equal to:
    a. Rs.7.86 crores and 68%
    b. Rs.24.86 crores and 68%
    c. Rs.7.86 crores and 14%
    d. Rs.24.86 crores and 14%

69. An asset-based valuation model is most appropriate for a company that:
    a. Is likely to be liquidated

b. has a high proportion of intangible assets among its total assets
c. is expected to remain profitable for the foreseeable future

Answer:

1.	Market value added = Market value of firm - Book value of firm • Market value of firm = Market value of equity (1,000 lacs) + Market value of debt (2,000 lacs) = 12,000 lacs • Book value of firm = Book value of equity (4,000 lacs) + Book value of debt (2,000 lacs) = 6,000 lacs • Market value added = 12,000 lacs - 6,000 lacs = Rs.6,000 lacs
2.	• Networth = Total assets – Fictitious assets – Sundry creditors – Short-term debt – long-term debt – Preference capital • Networth = 25,00,000 – 5,00,000 – 2,00,000 – 1,00,000 – 2,00,000 – 4,00,000 = Rs.11,00,000 Net asset value per share $= \dfrac{\text{Networth}}{\text{Number of shares}} = \dfrac{11,00,000}{1,00,000} = $ Rs. 11.00 per share
3.	Comparable Transaction Analysis
4.	To determine the startup's current market value
5.	$\text{ROI} = \dfrac{\text{Closing value} - \text{Amount invested}}{\text{Average investment}} = \dfrac{1,50,000 - 1,20,000}{\dfrac{1,00,000 + 1,20,000}{2}} = \dfrac{30,000}{1,10,000} = 27.27\%$
6.	PBT = 200 lacs – 150 lacs = 50 lacs Tax = PBT – PAT = 50 lacs – 30 lacs = 20 lacs Tax rate $= \dfrac{\text{Tax}}{\text{PBT}} = \dfrac{20 \text{ lacs}}{50 \text{ lacs}} = 40.00\%$
7.	Book value of firm = 10,00,000 + 40,00,000 = Rs.50,00,000 Market value of firm = 1,00,000 shares x 80 = Rs.80,00,000 Market value added = 80,00,000 - 50,00,000 = Rs.30,00,000
8.	Market value to sales ratio for Company A $= \dfrac{400}{500} = 0.80$ Times Market value to sales ratio for company B $= \dfrac{450}{600} = 0.75$ Times Market value to sales ratio for company C $= \dfrac{0.80 \text{ and } 0.75}{2} = 0.775$ Times Market value of company C $= 800 \times 0.775 = 620$
9.	Company A carries more risk as reflected in higher debt. Company B carries less risk and hence PE Multiple of B Limited will be higher than PE Multiple of A Limited
10.	Revenues of year 1, 2 and 3 = Rs.4800, Rs.5760 and Rs.6336 lacs. Working capital of year 1, 2 and 3 =Rs.1200, Rs.1440 and Rs.1584 lacs [25% of revenues]; Increase in working capital of year 3 = 1584 lacs - 1440 lacs = 144 lacs
11.	**Computation of FCFF:** 	Particulars	Amount (in lacs)
EBIT/EBT	200.00
Less: Interest	-60.00
EAT	**140.00**
Add: Depreciation	20.00
Less: Capital expenditure (Beginning of year 2 is end of year 1)	-50.00
Add: Decrease in working capital	20.00
FCFF	**130.00**	
12.	Traction
13.		Particulars	Amount
Profit after tax	13,00,000
Add: Depreciation	6,00,000
Add: Synergy gain	6,00,000
Less: Capital expenditure	(1,00,000)
Annual cash flow	**24,00,000**	
14.	The residual value of a company beyond the forecast period

15.	It provides a structured framework for assessing startup value
16.	Fixed asset turnover ratio is maintained and hence if revenues go up by 20 percent, then fixed assets will also increase by 20 percent; Closing fixed assets = 10,000 lacs + 20% = 12,000 lacs; Gross capex = 12,000 lacs - 9,000 lacs (opening WDV - Depreciation) = 3,000 lacs
17.	FCFF, cost of capital, FCFE and cost of equity
18.	Net assets value method

19.

Particulars	Calculation	Amount	
Land (20% of assets)	200 x 4	800.00	
Other assets (80%)		800.00	
Less: Preference capital		-100.00	
Less: Long-term debt		-200.00	
Less: Current liabilities		-300.00	
Less: Contingent liability	200 x 25%	-50.00	
Value of equity as per net assets method		**950.00**	

20. Let us assume no of shares of both companies to be 100

$$\text{Shares issued as consideration} = 100 \times \frac{1}{2} = 50$$

$$\text{Consideration paid} = 10,000 \text{ lacs} \times \left(\frac{50}{150}\right) = 3,333 \text{ lacs}$$

21.

$$\text{Value per share} = \frac{\text{Realizable value of assets} - \text{liquidation expenses} - \text{liabilities}}{\text{Number of shares}}$$

$$\text{Value per share} = \frac{16,00,000 - 1,00,000 - 4,00,000}{1,00,000} = 11.00 \text{ per share}$$

22.

Particulars	R Limited	S Limited	Combined entity
Residual net cash flow	90,10,000	54,87,000	1,85,00,000
Cost of equity	13.75%	13.05%	12.50%
Growth rate	0%	0%	0%
Value of company $\left[\frac{\text{Net cash flow}}{K_e - G}\right]$	**6.55 cr**	**4.20 cr**	**14.80 cr**

Consideration payable = Post-merger value of merged firm – Pre-merger value of S Limited
Consideration payable = 14.80 crores – 4.20 crores = Rs.10.60 Crores

23.	Startups often have unique and irreplaceable assets

24.

$$\text{EVA} = 2.5\% \text{ of capital employed}; 4 \text{ crores} = 2.5\% \text{ of CE}; \text{CE} = \frac{4 \text{ crores}}{2.50\%} = 160 \text{ crores}$$

WACC = 7.50%; Hence NOPAT = 10% of CE = 10% x 160 crores = 16 Crores

25. Value = [Going concern value x Probability of survival] + [Distress value x Probability of default]
Value = [100 x 40%] + [50 x 60%] = Rs. 70 crores

26.	It positively impacts valuation by attracting socially responsible investors and reducing risk

27.

Particulars	Division A	Division B	Division C
Sales/EBITDA/OI	4,00,000	1,50,000	2,00,000
Relevant multiple	10.00	20.00	25.00
Value of Division	40,00,000	30,00,000	50,00,000

Value of Reliance Limited = 40,00,000 + 30,00,000 + 50,00,000 = Rs.1,20,00,000

28.	Value of equity of automobile division = 1,000 crores – 600 crores = Rs.400 crores. The company is receiving consideration of Rs.450 crores and **hence ABC Limited can go ahead with automobile division.**
29.	Initial outflow = Share issued + debentures issued + cash paid = 8,00,000 + 4,00,000 + 6,00,000 = Rs.18,00,000

30.

Particulars	Calculation	Amount (in lacs)
Existing PAT		77
Existing PBT	77 lacs/(1-0.3)	110
Less: Extraordinary income		(8)
Add: Extraordinary loss		10
Profit from new product	70 – 20 – 12 – 10	28
Future maintainable PBT		**140**
Future maintainable PAT	140 x 70%	**98**

31.	FCFF = EPS + Depreciation - Capital expenditure - Working capital

	FCFF = 10 + 4 - 5 - 4 = 5 per share
32.	Capitalization rate $= \dfrac{EPS}{Share\ price} = \dfrac{10}{100} = 10.00\%$ Value of business $= \dfrac{Expected\ Annual\ Maintainable\ Profit}{Capitalization\ rate} = \dfrac{20,00,000}{10\%} = \mathbf{2,00,00,000}$
33.	Comparable public company valuations
34.	Realizable value method
35.	Intrinsic value of equity = Value of firm – value of debt + Value of non-core assets Intrinsic value of equity = 1,000 – 200 + 100 = Rs.900 lacs
36.	FCFE = PAT + Depreciation - Capex - working capital - repayment of loan FCFE = 10,000 + 0 - 0 - 0 - 2,000 = 8,000 lacs
37.	Existing PBT $= \dfrac{10,00,000}{50\%} = 20,00,000$ Extraordinary income will not continue and hence the same is removed. Revised PBT is Rs.15,00,000. New product will make profits of Rs.20,00,000 and hence FMP (before tax) is Rs.35,00,000. Future maintainable profit (after tax) = Rs.17,50,000
38.	Expected cash flow in year 4 $= 25$ million x $0.8^4 = 10.24$ million Current post $-$ money valuation $= \dfrac{10.24}{1.25^4} = 4.19$ million Pre $-$ money valuation $= 4.19$ million $- 3$ million $= 1.19$ million
39.	Cash Flow Based Approach **Explanation:** The Cash Flow Based Approach focuses on the company's expected future cash flows. For a startup with disruptive technology, projecting future cash flows is essential to determine its potential value, making this approach suitable.
40.	Expected bankruptcy cost = [100 crores – 40 crores] x 40% = Rs.24 crores Value of ABC Limited = Unlevered firm + Tax benefit on debt – Bankruptcy cost Value of ABC Limited = 100 crores + (50 crores x 30%) – 24 Crores = Rs.91 Crores Value of equity = 91 crores – 50 crores = Rs.41 Crores
41.	<table><tr><th>Particulars</th><th>Amount</th></tr><tr><td>Gross profit</td><td>10,00,000</td></tr><tr><td>Less: Indirect expenses</td><td>-4,00,000</td></tr><tr><td>EBITDA</td><td>6,00,000</td></tr><tr><td>Earning value of company (6,00,000/11.25%)</td><td>53,33,333</td></tr><tr><td>Number of shares</td><td>1,00,000</td></tr><tr><td>Earning value per share</td><td>53.33</td></tr></table>
42.	**Identification of book value weights:** <table><tr><th>Source</th><th>cost</th><th>Weight</th><th>Product</th></tr><tr><td>Equity</td><td>20</td><td>X</td><td>20X</td></tr><tr><td>Debt</td><td>10</td><td>1-X</td><td>10-10X</td></tr><tr><td>Total</td><td>12</td><td>1</td><td>20X+10-10X = 12</td></tr></table>$20X + 10 - 10X = 12$; $10X = 2$; $X = 0.2$ Times - Hence the weight of equity is 20% and weight of debt is 80% **Computation of WACC with market value weights:** - Weight of equity = 0.20 x 3 = 0.60 Times - Weight of debt = 0.80 x (9/10) = 0.72 Times <table><tr><th>Source</th><th>cost</th><th>Weight</th><th>Product</th></tr><tr><td>Equity</td><td>20</td><td>0.60</td><td>12.00</td></tr><tr><td>Debt</td><td>10</td><td>0.72</td><td>7.20</td></tr><tr><td>Total</td><td></td><td>1.32</td><td>19.20</td></tr></table>WACC $= \dfrac{19.20}{1.32} = 14.55\%$
43.	Free cash flow needs to adjusted for one-off items which are not likely to recur in future Free cash flow = 600 lacs – 200 lacs + 100 lacs + 50 lacs = Rs.550 lacs
44.	Minimum compensation for promoters = Value of shares held (16,00,000) + Value of excess remuneration (15,00,000) = Rs.31,00,000

	Minimum price per share $= \dfrac{31,00,000}{40,000 \text{ shares}} = $ Rs. 77.50 per share
45.	Higher projected exit multiple
46.	PE Ratio Method
47.	Enterprise value = Value of equity + Value of debt - Amount of cash 40,00,000 = Value of equity + 10,00,000 - 5,00,000 35,00,000 = Value of equity
48.	Net realizable value = Rs.225 Crores + 100 Crores – 25 Crores = Rs.300 Crores
49.	Revenue increased by 20 percent and hence company will need additional assets to fund growth. Capital employed of company will increase by 20 percent to fund this growth. Capital employed = 4,000 lacs - 1,000 lacs = 3,000 lacs; Fund required = Increase in capital employed = 3,000 lacs x 20% = Rs.600 lacs
50.	Terminal value $= \dfrac{(20 \text{ x } 10) + (7 \text{ x } 6) + 0}{3} = 80.67$ Post $-$ money value $= \dfrac{80.67}{1.25^4} = 33.04$ Pre-money value = 33.04 – 5.00 = 28.04 Hence answer is 80.67 million and 28.04 million
51.	Startups often have negative cash flows in their early stages.
52.	Value of one user of whatsapp $= \dfrac{450 \text{ billion}}{450 \text{ million}} = $ USD 1,000 per user Relevant multiple for chatapp $= 1,000 - 95\% = $ USD 50 per user **Value of chatapp = 16 million x 50 = USD 800 million**
53.	Financial leverage $= \dfrac{\text{EBIT}}{\text{EBT}}$ EBIT is taken as X; Interest = 400 x 11% = 44 lacs; EBT = X - 44 lacs 3 Times $= \dfrac{X}{X - 44}$; 3X $-$ 132 $=$ X; 2X $=$ 132; X $=$ 66 lacs. Hence EBIT is equal to 66 lacs
54.	• Market value added = Market value of firm - Book value of firm • Market value of firm = (200/10 x 50) + 150 = 1,150 lacs • Book value of firm = 200 + 400 + 150 = 750 lacs • Market value added = 1,150 lacs - 750 lacs = 400 lacs
55.	Cost of debt = 12 x (1 - 25%) = 9%; Cost of equity = 16% WACC $= [9\% \text{ x } 40\%] + [16\% \text{ x } 60\%] = 13.20\%$
56.	Capital employed has to be on the basis of economic value of assets and the same would be equal to replacement cost of assets of 6,000 lacs
57.	EVA. Positive EVA would indicate good performance of management and vice versa
58.	Adjusted EBIT = 2,000 lacs + 500 lacs (Training added back as the same is an asset) - 100 (economic depreciation as the life is 5 years) = 2,400 lacs
59.	EVA amount can be declared as dividend without any impact on the valuation of the company EVA Dividend $= \dfrac{20,00,000}{5,00,000 \text{ shares}} = $ Rs. 4 per share
60.	All of the above
61.	Answer is 5.10 and 22.0

Particulars	Amount
Expected exit value (500 crores x 2)	1,000.00
Less: Payment of debt	-150.00
Less: Payment of preference	-300.00
Balance amount for management and PE	550.00
Amount payable to PE [550.00 x 80%]	440.00
Amount payable to management [550 x 20%]	110.00
Total consideration to PE [440 + 300 preference)	740.00
Amount contributed by PE [25 + 120]	145.00
Exit Multiple for PE [740/145]	**5.10**
Exit multiple for management [110/5]	**22.00**

62.	Cost of debt = 9 percent; Cost of equity = 16 percent WACC $= \dfrac{[9 \text{ x } 0.4] + [16 \text{ x } 1]}{0.4 + 1} = 14$ percent

63.	Generally, the going-concern value of a firm will be greater than non-going concern value
64.	The company has equity capital of Rs.100 lacs. Value of equity will go up by Rs.100 lacs as the patent hasn't been recorded in books and hence revised equity value is Rs.200 lacs. The company has debt of Rs.200 lacs $$WACC = \frac{8\% \times 200 + 14\% \times 200}{200 + 200} = 11\%$$
65.	Industry-specific characteristics and trends
66.	Value of firm = Invested capital + Present value of future EVA = 80 lacs + 120 lacs = 200 lacs
67.	EVA = (EBIT x (1 - Tax Rate)) - (Capital employed x WACC) EVA = [2,000 x 60%] - [8,000 x 10%] = Rs.400 lacs
68.	Answer is Rs.7.86 Crores and 68% $$Post - money\ valuation\ of\ ABC\ Limited = \frac{120\ crores}{(1 + 30\%)^6} = Rs.\ 24.86\ Crores$$ Pre-money valuation = 24.86 crores – 17 crores = Rs.7.86 Crores $$\%\ stake\ acquired = \frac{17}{24.86} \times 100 = 68.00\%$$
69.	Is likely to be liquidated **Explanation:** For companies that are likely to be liquidated, the asset-based approach may be the most appropriate value as the assets may be worth more to another entity. Asset-based valuation models do not work well for companies that have large amounts of intangible assets. Because asset-based valuation is not forward-looking, an asset-based approach may underestimate the value of companies that are expected to be profitable.

Chapter 14 – Mergers, Acquisitions and Corporate Restructuring

1. Fixed Assets = 20,00,000; Current Assets = 30,00,000; 10% Loan = 2,00,000; Current liabilities = 8,00,000; P&L Debit Balance = 5,00,000; No of shares = 2,00,000. What is book value per share?
    a. 20
    b. 17.50
    c. 25.00
    d. 22.50

2. MPS of company A = 50; MPS of Company B = 20. Company A wants to acquire company B by paying premium of 25%. What is swap ratio based on market prices?
    a. 50:20
    b. 20:50
    c. 25:50
    d. 20:62.50

3. Which of the following statements accurately differentiates between a merger and an acquisition?
    a. In a merger, two companies combine to form a new entity, while in an acquisition, one company absorbs another.
    b. In a merger, one company acquires another, while in an acquisition, two companies combine to form a new entity.
    c. Mergers and acquisitions are interchangeable terms and have the same meaning.
    d. Mergers and acquisitions both involve the complete dissolution of one company.

4. Networth of Bank A = 100 lacs; CAR = 16%; Networth of Bank B = 200 lacs; CAR = 6%; What is Capital Adequacy Ratio of merged Bank?
    a. 9.33%
    b. 12.67%
    c. 7.58%
    d. None of the above

5. Advances of Bank A = 1000 lacs; GNPA (%) of Bank A= 20%; Advances of Bank B = 2,000 lacs; GNPA of Bank B = 100 lacs; What will be GNPA (%) of merged Bank?
    a. 20%
    b. 15%
    c. 12.50%
    d. 10.00%

6. A merger between a telecommunications company and a media company is an example of which type of merger?
    a. Horizontal merger
    b. Vertical merger
    c. Conglomerate merger
    d. Concentric merger

7. The primary rationale behind Company A's acquisition of Company B, a leading supplier of critical components, is to ensure a stable and uninterrupted supply chain. This rationale aligns with which aspect of M&A?
    a. Consolidation of production capacities
    b. Operating synergies
    c. Diversification
    d. Increasing market power

8. Cash flows of Company A = 25 lacs; Cash flows of company B = 20 lacs; Merger will lead to annual cash flows of 60 lacs due to synergy gain. Pre-merger cost of capital of A Limited = 10%; Pre-merger cost of capital of B Limited = 20%; Post-merger cost of Capital of merged entity = 8%. How much is the gain from merger?
    a. 400 lacs
    b. 750 lacs
    c. 75 lacs
    d. 150 lacs

9. Cash flows of Company A = 25 lacs; Cash flows of company B = 20 lacs; Merger will lead to annual cash flows of 60 lacs due to synergy gain. Pre-merger cost of capital of A Limited = 10%; Pre-merger cost of capital of B Limited = 20%; Post-merger cost of Capital of merged entity = 8%. A Limited has acquired B Limited. Consideration paid for acquisition is Rs.150 lacs. How much is the gain for shareholders of B Limited?
    a. 150 lacs
    b. 130 lacs
    c. 50 lacs
    d. 80 lacs

10. Company P, a leading pharmaceutical company, acquires Company Q, a smaller biotech firm, to gain access to its promising drug pipeline. This acquisition aligns with which rationale for M&A?
    a. Financial synergies
    b. Increasing market power
    c. Growth
    d. Consolidation of production capacities

11. Cash flows of Company A = 40 lacs; Expected Cash flows of Company B for next year= 80 lacs; Valuation of Company B presently is Rs.800 lacs and company B is likely to grow at 10 percent. Post merger Company B will grow at 15 percent. How much should be the revised value for business of Company B?
    a. Rs.800 lacs
    b. Rs.1,200 lacs
    c. Rs.1,600 lacs
    d. Rs.400 lacs

12. When a steel manufacturer acquires an iron ore mining company, what type of merger is this?
    a. Horizontal merger
    b. Vertical merger
    c. Conglomerate merger
    d. Market extension merger

13. Existing MPS of A Limited = Rs.40; PE Multiple of A Limited = 20 Times; No of shares of A Limited = 1,00,000; Existing EPS of B Limited = Rs.10; No of shares of B Limited = 40,000. A Limited is acquiring B Limited by issue of shares and wants to report post-merger EPS of Rs.4. How many shares must A Limited issue to B Limited.
    a. 40,000 shares
    b. 50,000 shares
    c. 1,50,000 shares
    d. 70,000 shares

14. A Limited is planning to acquire B Limited. Current share price of B Limited is Rs.10 and the same got increased by 20% on merger announcement. Post-merger EPS and MPS will be Rs.2 and Rs.25. Exchange ratio offered in merger is 0.8:1. Mr. X, an investor, having 10,000 shares of B Ltd. is having

another investment opportunity, which yields annual return of 12% is seeking your advise whether he needs to offload the shares in the market or accept the shares from A Limited.
- a. He should sell shares in market
- b. He should accept merger offer
- c. Indifferent between sales of shares and acceptance of merger offer

15. PE Multiple of A Limited = 20 Times; No of shares of A Limited = 1,00,000; PAT of A Limited = 25,00,000. PE Multiple of B Limited = 40 Times; No of shares of B Limited = 50,000; PAT of B Limited = 50,00,000. What is the weighted average PE Multiple if these two entities merge together?
- a. 30 Times
- b. 26.67 Times
- c. 33.33 Times

16. A Limited has acquired B Limited with a swap ratio of 1:2. Post-merger EPS is likely to be Rs.40. What is the equivalent EPS for shareholders of B Limited?
- a. Rs.20
- b. Rs.40
- c. Rs.80

17. Net profit margin = 4%; Assets to sales ratio = 0.80; Debt to assets ratio = 40%. How much is the ROE?
- a. 12.50%
- b. 8.00%
- c. 8.33%
- d. 5.33%

18. A is acquiring B Limited. Pre-merger EPS of B Limited is Rs.10. Post-merger EPS of combined entity is Rs.25. The merger was done by issuing 4,00,000 shares to B Limited shareholders. Existing shares of B Limited is 10,00,000. What is the impact of merger on EPS for B Limited shareholders?
- a. Gain of Rs.15 per share
- b. No gain or no loss
- c. Gain of Rs.52.50 per share
- d. Loss of RS.15 per share

19. _____ refers to the technique where the acquiring company accumulates larger number of shares in a target before making an open offer
- a. Brand Power
- b. Street sweep
- c. Bear Hug
- d. Strategic Alliance

20. Value of acquiring company = Rs.1,000 lacs; Value of target company = Rs.600 lacs. Value of merged entity = Rs.2,000 lacs. The number of shares in both companies are same and exchange ratio offered is 1:2. How much is the NPV of stock offer?
- a. Rs.666.67 lacs
- b. Rs.400 lacs
- c. Rs.333.33 lacs
- d. Rs.66.67 lacs

21. Gross NPA of Bank A = 40%; Gross NPA of Bank B = 20%. Number of shares of Bank A = 40,00,000. Bank B plans to acquire Bank A and exchange ratio is based on GNPA. How many shares are to be issued?
- a. 20,00,000
- b. 40,00,000

      c.   80,00,000

22. Free float market cap = Rs.400 lacs. Promoters hold 80% of the company. There are total 10,00,000 shares in company. What will be the MPS?
    a. Rs.40
    b. Rs.32
    c. Rs.200
    d. Rs.100

23. Company X, a conglomerate, decides to sell a significant portion of its shares in one of its subsidiaries to the public through an initial public offering (IPO). This form of divestiture is known as:
    a. Spin-off
    b. Equity carve out
    c. Demerger
    d. Partial sell off

24. Gross profit = 20%. Inventory Turnover Ratio = 10 Times; Inventory = 2,00,000. How much is the sales of the company?
    a. Rs.20,00,000
    b. Rs.16,00,000
    c. Rs.25,00,000
    d. Rs.24,00,000

25. A Limited is planning to acquire B Limited. MPS of A Limited and B Limited is 40 and 20. A Limited has estimated the intrinsic value of B Limited to be 30. What should be the exchange ratio on the basis of intrinsic value?
    a. 2:1
    b. 1:2
    c. 1.33:1
    d. 1:1.33

26. EPS of company A = Rs.10; MPS of company A = Rs.100; EPS of company B = Rs.20; MPS of Company B = Rs.100; Company A plans to acquire company B and wants to maintain its EPS. What should be the exchange ratio.
    a. 1:1
    b. 1:2
    c. 2:1

27. A publicly traded company's board of directors, along with a private equity firm, decides to acquire all outstanding shares of the company's stock and take it off the stock exchange. This process is known as:
    a. Leveraged buyout
    b. Equity buyback
    c. Management buyout
    d. Going private

28. What is the primary purpose of a Special Purpose Acquisition Company (SPAC)?
    a. To engage in any business activity specified in its memorandum of association.
    b. To raise funds through an initial public offering (IPO) and subsequently identify and acquire target companies.
    c. To provide venture capital to startups and emerging businesses.
    d. To merge with an existing publicly traded company.

29. A Limited is acquiring B Limited. B Limited currently has 10 crores shares of Rs.50 each. A Limited plans to pay cash consideration of Rs.60 per share. How much is the gross cost and net cost of merger?
    a. Rs.500 crores and 0
    b. Rs.600 crores and 0
    c. Rs.600 crores and Rs.100 crores
    d. Rs.500 crores and Rs.100 crores

30. A Limited will issue 1,00,000 shares as consideration to B Limited. B Limited currently has 30,00,000 shares comprising of 20,00,000 shares of Rs.10 each (fully paid) and 10,00,000 shares of Rs.10 each (partly paid of Rs.5). How many shares will be issued to Mr.A who holds 1,00,000 fully paid shares and 1,00,000 partly paid shares?
    a. 8,000 shares
    b. 6,000 shares
    c. 6,667 shares
    d. 10,000 shares

31. Pre-merger MPS of A Limited = Rs.100; Pre-merger MPS of B Limited = Rs.200; A is acquiring B Limited and the expected post-merger MPS is Rs.150. Exchange ratio agreed is 2:1. What is the gain/loss per share for A Limited and B Limited shareholders?
    a. Gain of Rs.50 and Gain of Rs.100
    b. Gain of Rs.50 and loss of Rs.50
    c. Gain of Rs.50 and loss of Rs.100
    d. Gain of Rs.100 and Gain of Rs.50

32. A Limited (Acquiring company) and B Limited (Target company) are negotiating a merger deal. Two ER are currently under negotiation 1:2 and 1:3. Acquiring company is stronger and would be able to get a better deal in negotiation. The final exchange ratio is likely to be closer to:
    a. 1:2
    b. 1:3
    c. 1:2.50

33. _____ is a tactic in which a target company offers to be acquired by a friendly company
    a. Poison Put
    b. Poison Pill
    c. White Knight
    d. Greenmail

34. When two competing software companies in the same industry merge to enhance their market dominance, what type of merger is this?
    a. Horizontal merger
    b. Vertical merger
    c. Conglomerate merger
    d. Market extension merger

35. A Limited is acquire B Limited. Exchange ratio offered is 1:2. Mr.X holds 10% of A Limited and 5% of B Limited. A Limited shareholders hold 60% of merged firm. What will be X's shareholding in merged firm?
    a. 7.50%
    b. 8.00%
    c. 8.33%
    d. 15.00%

36. Company Z, a retail conglomerate, intends to separate its fashion brand subsidiary into a new, standalone company by distributing its shares to existing shareholders. This form of divestiture is known as:
    a. Spin-off
    b. Demerger
    c. Equity carve out
    d. Partial sell off

37. Value of Acquiring Company = 1,000 lacs (10 lac shares x 100); Value of Target company = 500 lacs (50 lac shares x 10); Merger gain = 500 lacs. What is acceptable minimum and maximum exchange ratio?
    a. 0.0667:1 and 0.2000:1
    b. 5:1 and 10:1
    c. 0.5:1 and 1:1

38. Value of A Limited = 1000 lacs; Value of B Limited = 500 lacs; Synergy gain = 500 lacs; A is acquiring B Limited and exchange ratio agreed is 1:3. No of shares in both companies are same before merger. How much is the gross consideration paid?
    a. 500 lacs
    b. 1000 lacs
    c. 1500 lacs
    d. 2000 lacs

39. Net cost of merger = 300 lacs; Pre-merger value of Acquiring company = 1500 lacs; Pre-merger value of Target company = 700 lacs. Number of shares both acquiring and target before merger is same. Synergy gain from merger is 300 lacs. What is the swap ratio agreed during merger?
    a. 0.8:1
    b. 1:1
    c. 0.67:1
    d. 2:1

40. A private equity firm acquires a controlling stake in a company by using a combination of its own funds and borrowed money. This type of transaction is an example of a:
    a. Leveraged buyout
    b. Equity buyback
    c. Management buyout
    d. Going private

41. Earnings of Target Company = Rs.75,00,000. Acquiring company plans to give cash consideration which will be funded with 15% loan. Tax rate is 30%. How much is the maximum consideration payable so the overall EPS of acquiring company is maintained?
    a. 500 lacs
    b. 714.29 lacs
    c. 1000 lacs
    d. 250 lacs

42. Value of Acquiring Company (A Limited) = Rs.540 lacs; Value of Target Company (B Limited) = Rs.90 lacs. Synergy gain from merger = Rs.45 lacs; No of shares of A Limited = 30 lacs; No of shares of B Limited = 18 lacs; Exchange ratio = 1:3. How much is the consideration paid?
    a. Rs.180 lacs
    b. Rs.225 lacs
    c. Rs.112.50 lacs
    d. Rs.90 lacs

43. A reverse merger is often used as a strategy for:
    a. Reducing competition in the industry
    b. Expanding into new markets
    c. Going public quickly and cost-effectively
    d. Achieving economies of scale

44. A Limited plans to acquire B Limited. There is no synergy gain. A Limited wants to ensure that its earnings are not diminished by merger. What should be the basis of merger?
    a. EPS
    b. MPS
    c. BVPS

45. A Limited plans to acquire B Limited. There is no synergy gain. A Limited wants to ensure that its shareholders are not at loss in the merger. What should be the basis of merger?
    a. EPS
    b. MPS
    c. BVPS

46. Earnings of A Limited = 20,00,000; PE Multiple of A Limited = 10 Times; Earnings of B Limited = 40,00,000; PE Multiple of B Limited = 7.5 Times; Combined earnings will increase by 2,50,000 due to synergy gain benefits. What should be the minimum combined PE Multiple to justify the merger?
    a. 10 Times
    b. 8.75 Times
    c. 8.33 Times
    d. 8 Times

47. No of shares of A Limited = 20,00,000; No of shares issued to B Limited shareholders in merger = 10,00,000; Post-merger value A Limited = Rs.300 lacs; What are the value of original shareholders of A Limited and B Limited?
    a. 150 lacs and 150 lacs
    b. 200 lacs and 100 lacs
    c. 100 lacs and 200 lacs

48. A company's board of directors decides to repurchase a portion of its own shares from the open market as part of a strategy to enhance shareholder value. This is an example of:
    a. Leveraged buyout
    b. Equity buyback
    c. Management buyout
    d. Going private

49. Current book value per share = Rs.150. The company plans to make bonus issue of 2:1 and then split 100 rupees shares into 20 shares of 5 rupees each. What will be the book value per share post bonus issue and split respectively?
    a. 100 and 5
    b. 50 and 2.5
    c. 150 and 7.5
    d. 20 and 1

50. _____ is a strategy aims at the target company making a counter bid for the acquirer company
    a. White squire
    b. White knight

    c. Golden parachutes
    d. Pac-man defense

51. Last year earning of Acquiring company = 100 lacs; Growth rate = 10%; Last year earning of Target company = 50 lacs; Growth rate = 6%; Synergy gain due to merger = 10 lacs and the likely growth rate post merger is 12%. The companies have just paid dividends and retained earnings have already been re-invested in new projects. What is the likely PAT of merged firm for year 1?
    a. 178 lacs
    b. 179.2 lacs
    c. 173 lacs
    d. 163 lacs

52. Promoters hold 90 percent of a company. They are planning to issue bonus shares to minority shareholders to bring holding down to 75 percent. What is the bonus ratio?
    a. 2:1
    b. 1:2
    c. 1.5:1
    d. 1:1.5

Answer:

1.	Value of equity = Total assets - Outside liabilities Value of equity = 50,00,000 - 10,00,000 = 40,00,000 Book value per share $= \dfrac{40,00,000}{2,00,000} = 20$ per share **Note:** P&L debit balance is not considered as part of total assets in above computation and hence the same is not required to be deducted
2.	Base values = 50:20. The company wants to pay a premium of 25 percent and hence the base value for company B changes as 25 **Swap ratio = 25:50**
3.	In a merger, two companies combine to form a new entity, while in an acquisition, one company absorbs another
4.	Networth of Bank A $= 100$ lacs; CAR $= 16\%$; Risk weighted assets $= \dfrac{100}{16\%} = 625$ lacs Networth of Bank B $= 200$ lacs; CAR $= 6\%$; Risk weighted assets $= \dfrac{200}{6\%} = 3,333.33$ lacs Total Networth of merged bank = 300 lacs; Total risk weighted assets = Rs.3,958.33 lacs CAR $= \left(\dfrac{300}{3,958.33}\right) \times 100 = 7.58\%$
5.	GNPA of Bank A = 1000 lacs x 20% = Rs.200 lacs GNPA of Bank B = Rs.100 lacs GNPA (%) of merged Bank $= \dfrac{300\ \text{lacs}}{3,000\ \text{lacs}} = 10\%$
6.	Conglomerate merger **Explanation:** A conglomerate merger involves the combination of companies from different industries or sectors. In this case, the telecommunications company and media company operate in unrelated industries, making it a conglomerate merger
7.	Operating synergies
8.	Value of A Limited before merger $= \dfrac{25\ \text{lacs}}{10\%} = $ Rs. 250 lacs Value of B Limited before merger $= \dfrac{20\ \text{lacs}}{20\%} = $ Rs. 100 lacs Value of merged entity $= \dfrac{60\ \text{lacs}}{8\%} = $ Rs. 750 lacs Merger gain = 750 lacs - 350 lacs = 400 lacs
9.	Value of B Limited before merger $= \dfrac{20\ \text{lacs}}{20\%} = $ Rs. 100 lacs Consideration paid in merger = Rs.150 lacs

	Gain to shareholders of B Limited = 150 lacs - 100 lacs = Rs.50 lacs
10.	Growth
11.	Cost of equity of Company B $= \dfrac{80\ lacs}{800\ lacs} + 10\% = 20\%$ Revised growth rate = 15% Revised value $= \dfrac{80\ lacs}{20\% - 15\%} = Rs.\ 1,600\ lacs$
12.	Vertical merger **Explanation:** A vertical merger occurs between companies at different stages of the same supply chain. In this case, the steel manufacturer (downstream) acquiring the iron ore mining company (upstream) is an example of a vertical merger.
13.	Current EPS of A Limited $= \dfrac{MPS}{PE\ Multiple} = \dfrac{40}{20} = Rs.\ 2\ per\ share$ Current PAT of A Limited = 2 per share x 1,00,000 = Rs.2,00,000 Current PAT of B Limited = 10 x 40,000 = Rs.4,00,000 Post-merger PAT = 2,00,000 + 4,00,000 = Rs.6,00,000 Maximum shares for EPS of Rs. 4 $= \dfrac{6,00,000}{4} = 1,50,000$ Shares that can be issued in merger = 1,50,000 - 1,00,000 = 50,000 shares
14.	Earning yield of A Limited $= \dfrac{Equivalent\ EPS}{CMP} \times 100 = \dfrac{2\ x\ 0.8}{12} \times 100 = 13.33\%$ Earning Yield from A Limited is better than alternative investment opportunity and **hence Mr.X should accept to merger offer**
15.	Weighted average PE Multiple is to be computed on the basis of PAT of company Weighted average PE Multiple $= \dfrac{[20\ x\ 25,00,000 + 40\ x\ 50,00,000]}{[25,00,000 + 50,00,000]} = 33.33\ Times$
16.	Equivalent EPS $=$ Post $-$ merger EPS x Exchange ratio $= 40 \times \left(\dfrac{1}{2}\right) = Rs.\ 20\ per\ share$
17.	$ROE = \dfrac{Net\ Profit}{Sales} \times \dfrac{Sales}{Assets} \times \dfrac{Assets}{Equity} = 4\ x\ \dfrac{1}{0.80}\ x\ \dfrac{100}{60} = 8.33\%$ Debt is 40% of assets and hence equity will be 60% of assets. Therefore, we can say that equity is Rs.60 if assets is Rs.100. The same has been used in above formula to compute ROE.
18.	Equivalent EPS $= 25 \times \left(\dfrac{4,00,000}{10,00,000}\right) = Rs.\ 10\ per\ share$ Pre-merger EPS = Rs.10 per share Impact of merger on EPS = No gain or no loss
19.	Street Sweep
20.	Let us assume both companies are having 100 shares and hence the number of shares offered to target company is 50 (100 x ½). Consideration paid $= 2,000\ lacs\ x\ \left(\dfrac{50}{150}\right) = Rs.\ 666.67\ lacs$ True cost of merger $= 666.67\ lacs - 600\ lacs = Rs.\ 66.67\ lacs$ Gain from merger $= 2,000 - (1,000 + 600) = Rs.\ 400\ lacs$ **NPV of merger $= 400 - 66.67 = Rs.\ 333.33\ lacs$**
21.	Base values = 20:40. Swapping is not required for negative parameter Shares to be issued $= 40,00,000\ x\ \left(\dfrac{20}{40}\right) = 20,00,000\ shares$
22.	Free float market cap = 400 lacs; Shareholding by public = 20% Total market cap of company $= \dfrac{400\ lacs}{20\%} = Rs.\ 2,000\ lacs$ $MPS = \dfrac{2,000\ lacs}{10\ lacs} = Rs.\ 200\ per\ share$
23.	Equity carve out
24.	Inventory Turnover Ratio $= \dfrac{COGS}{Inventory}; 10 = \dfrac{COGS}{2,00,000}; COGS = 20,00,000$ GP is 20% of sales and hence COGS is 80% of sales $20,00,000 = 80\%\ of\ sales; Sales = \dfrac{20,00,000}{80\%} = 25,00,000$

25.	Intrinsic value of B Limited is Rs.30. Intrinsic value of A Limited will be taken as the market price of A Limited in absence of information. **Hence base values are 40:30 and exchange ratio will be 30:40 (or) 1:1.33**
26.	Exchange ratio should be on the basis of EPS if the company wants to maintain EPS; Base values = 10:20; Exchange ratio = 20:10 (or) 2:1
27.	Going Private
28.	To raise funds through an initial public offering (IPO) and subsequently identify and acquire target companies.
29.	Gross cost of merger = 10 crores x 60 = Rs.600 crores Net cost of merger = 600 crores – 500 crores = Rs.100 Crores
30.	• Equivalent fully paid shares of B Limited = 20,00,000 + (10,00,000 x 0.50) = 25,00,000 • A Limited will be issuing 1,00,000 shares for 25,00,000 equivalent fully paid shares • No of equivalent fully paid shares held by Mr.A = 1,00,000 + (1,00,000 x 0.50) = 1,50,000 shares No of shares issued $= \dfrac{1,00,000}{25,00,000} \times 1,50,000 = 6,000$ shares
31.	Gain for A Limited = Post-merger MPS - Pre-merger MPS = 150 - 100 = Rs.50 Gain for B Limited = Equivalent MPS - Pre-merger MPS = 300 - 200 = Rs.100
32.	Acquiring company is stronger company and they would like to pay a lower consideration in merger. Two exchange ratios under discussion is 0.5:1 (1:2) and 0.33:1 (1:3). **Final exchange ratio will be closer to lower limit of 1:3 or 0.33:1.**
33.	White Knight
34.	Horizontal merger
35.	<table><thead><tr><th>Shareholders</th><th>Total Shares</th><th>% holding</th><th>Shares held by Mr.X</th></tr></thead><tbody><tr><td>A Limited shareholders</td><td>60</td><td>10%</td><td>6 shares [60 x 10%]</td></tr><tr><td>B Limited shareholders</td><td>40</td><td>5%</td><td>2 shares [40 x 5%]</td></tr><tr><td>Total shares</td><td>100</td><td>**8%** **[8/100]**</td><td>8 shares</td></tr></tbody></table>
36.	Spin-off
37.	Value of merged firm = 1000 lacs + 500 lacs + 500 lacs = 2,000 lacs **Minimum exchange ratio:** <table><thead><tr><th>Particulars</th><th>Value</th><th>No of shares</th></tr></thead><tbody><tr><td>Value of acquiring company</td><td>1,500 lacs</td><td>10,00,000</td></tr><tr><td>Value of target company</td><td>500 lacs</td><td>3,33,333 $\left(10,00,000 \times \dfrac{500}{1500}\right)$</td></tr><tr><td>Value of merged entity</td><td>2,000 lacs</td><td>13,33,333</td></tr></tbody></table> • Minimum exchange ratio is based on minimum consideration of Rs.500 lacs (Pre-merger value of target company) • **ER = 3,33,333:50,00,000 (or) 0.0667:1** **Maximum Exchange ratio:** <table><thead><tr><th>Particulars</th><th>Value</th><th>No of shares</th></tr></thead><tbody><tr><td>Value of acquiring company</td><td>1,000 lacs</td><td>10,00,000</td></tr><tr><td>Value of target company</td><td>1,000 lacs</td><td>10,00,000</td></tr><tr><td>Value of merged entity</td><td>2,000 lacs</td><td>20,00,000</td></tr></tbody></table> • Maximum exchange ratio is based on maximum consideration of Rs.1,000 lacs. • Maximum consideration = Post-merger value – pre-merger value = 2,000 lacs – 1,000 lacs = Rs.1,000 lacs • **ER = 10,00,000:50,00,000 (or) 0.20:1**
38.	Post-merger value = 1000 lacs + 500 lacs + 500 lacs = 2,000 lacs Let us assume no of shares in both companies are 300. Exchange ratio agreed is 1:3 and hence we would have issued 100 shares for merger; No of shares post merger = 400

	Value of shares issued $= 2,000$ lacs x $\left(\dfrac{100}{400}\right) = $ Rs. 500 lacs
39.	Consideration paid = Net cost of merger + pre-merger value = 300 lacs + 700 lacs = 1,000 lacs Value of merged entity = 1500 lacs + 700 lacs + 300 lacs = 2500 lacs; Let us assume that both company had 60 shares each before merger. % of company held by target company shareholders $= \dfrac{1,000 \text{ lacs}}{2,500 \text{ lacs}} = 40\%$ So, acquiring company shareholders hold 60 percent of company and they have 60 shares. Target company shareholders would have been given 40 shares for 40 percent holding; Exchange ratio = 40:60 (or) 2:3 (or) 0.67:1
40.	Leveraged buyout
41.	The company can maintain EPS if the post-tax interest cost on bank borrowing is equal to total earnings of target company; After-tax cost of debt = 15 x 70% = 10.50% Maximum borrowing $= \dfrac{75 \text{ lacs}}{10.5\%} = $ Rs. 714.29 lacs
42.	Value of merged firm = 540 lacs + 90 lacs + 45 lacs = Rs.675 lacs Post − merger price $= \dfrac{675 \text{ lacs}}{30 \text{ lacs} + 6 \text{ lacs}} = $ Rs. 18.75 per share Consideration paid = 6 lacs x 18.75 = Rs. 112.50 lacs
43.	Going public quickly and cost-effectively
44.	EPS
45.	Shareholders will not be at loss if pre-merger MPS is equal to post-merger MPS. Post-merger MPS will be maintained if the company's EPS is maintained. Company's EPS will be maintained if the exchange ratio is on the basis of EPS
46.	Pre-merger value of A Limited = 20 lacs x 10 = 200 lacs; Pre-merger value of B Limited = 40 lacs x 7.5 = 300 lacs; Hence combined firm should have minimum value of 500 lacs Earnings of combined firm = 20 lacs + 40 lacs + 2.5 lacs = 62.50 lacs PE Multiple to justify merger $= \dfrac{500 \text{ lacs}}{62.50 \text{ lacs}} = 8$ Times
47.	Value of original shareholders refers to value of A Limited and B Limited shareholders in merged firm Value of A Limited shareholders $= 20,00,000$ x $\left(\dfrac{300 \text{ lacs}}{30 \text{ lacs}}\right) = 200$ lacs Value of B Limited shareholders $= 10,00,000$ x $\dfrac{300 \text{ lacs}}{30 \text{ lacs}} = 100$ lacs
48.	Equity Buyback
49.	The company makes bonus issue of 2 shares for every 1 share. Hence Rs.150 share will become three shares of Rs.50. Under split one share of Rs.50 will be split into 20 shares and value of each share will be Rs.2.5
50.	Pac-man defense
51.	Earnings have already been reinvested and hence next year growth will be based on growth rate of individual companies Next year PAT = (100 lacs + 10%) + (50 lacs + 6%) + 10 lacs = 173 lacs
52.	Let us assume there are 100 shares in the company. Promoters currently hold 90 shares in company and minority shareholder hold 10 shares. Target holding of promoter is 75 percent and hence 90 shares would represent 75 percent holding. Overall shares post bonus $= \dfrac{90}{75\%} = 120$ We need to issue 20 shares as bonus and hence bonus ratio will be 20:10 (or) 2:1

Chapter 15 – Startup Finance

1. Which of the following best defines bootstrapping in the context of startups?
   a. Securing venture capital funding to launch the business.
   b. Utilizing personal savings and revenue to fund initial operations.
   c. Collaborating with established corporations to share resources.
   d. Initiating a crowdfunding campaign to raise capital.

2. Which funding method allows a startup to raise capital from a large number of individuals, typically through online platforms, in exchange for equity or rewards?
   a. Family and Friends
   b. Peer to peer lending
   c. Crowdfunding
   d. Microloans

3. What would be the risk perception of the seed money contributed by venture capital investors?
   a. High
   b. Medium
   c. Low
   d. Extreme

4. Which of the following is not true about Angel Investors?
   a. Often, angel investors are among an entrepreneur's family and friends
   b. Angel investors are focused on helping startups take their first steps, rather than the possible profit they may get from the business
   c. Angel investors typically use their own money, unlike venture capitalists who use pooled money to invest
   d. Angel investors can only be individuals

5. Which advantage of venture capital funding distinguishes it from traditional bank loans?
   a. Lower interest rates and longer repayment terms.
   b. Fixed repayment schedule with no equity dilution.
   c. Minimal involvement and oversight from investors.
   d. Access to mentorship, expertise, and industry connections.

6. Which of the following is not a characteristic of venture capital funding?
   a. VC funding is usually for a long period
   b. VC would be able to easily liquidate their holdings due to availability of many buyers for their stake
   c. VC investments carry high risk
   d. Majority of VC investments would be in the form of equity contribution

7. According to the Startup India scheme, what is the maximum age of an eligible startup to qualify for benefits?
   a. 5 years
   b. 7 years
   c. 10 years
   d. 15 years

8. Which funding approach involves a startup negotiating with its suppliers to delay payment for goods and services received?
   a. Purchase order financing
   b. Vendor Financing
   c. Personal Financing

      d. Factoring Accounts Receivables

9. Which of the following is not true in the context of structure of venture capital fund?
    a. Domestic funds are established within the same country where investments are made, while offshore funds are established in foreign jurisdictions
    b. Offshore funds (Unified structure) invest directly in Indian startups from a foreign entity, while the offshore structure involves investing in locally managed trust which in turn investments in Indian startups
    c. Both domestic and offshore funds contribute to the growth and development of startups

10. Which type of entity is NOT eligible to be considered as a startup under the Startup India scheme?
    a. Private Limited company
    b. Public Limited company
    c. Registered partnership firm
    d. Limited liability partnership

11. What is the primary distinction between venture capitalists (VCs) and angel investors?
    a. VCs invest exclusively in high-risk startups, while angel investors prefer established businesses.
    b. Angel investors invest only in technology-based startups, while VCs fund a variety of industries.
    c. Angel investors provide early-stage funding, often at the seed or startup phase, while VCs invest in later stages.
    d. VCs are individual investors, while angel investors represent institutional funds

12. What is a potential drawback of venture capital funding for startups?
    a. Limited access to expertise and industry connections.
    b. Minimal involvement in strategic decision-making by investors.
    c. High level of control and autonomy retained by founders.
    d. Equity dilution and loss of ownership stake for founders.

13. What is the maximum turnover limit for a startup to be eligible for benefits under the Startup India scheme?
    a. 10 crores
    b. 100 crores
    c. 25 crores
    d. 50 crores

14. In which funding approach does a startup sell its outstanding invoices to a third party at a discount in exchange for immediate cash?
    a. Vendor financing
    b. Purchase order financing
    c. Factoring accounts receivables
    d. Family and Friends

15. A Decacorn is a privately held start-up company which has achieved a valuation of _____
    a. Rs.100 crores
    b. Rs.1,000 crores
    c. USD 10 Million
    d. USD 10 Billion

16. What is the primary purpose of the "Problem Statement" section in a startup pitch presentation?
    a. To highlight the founder's background and expertise.

b.   To showcase the startup's unique selling points.
c.   To outline the market opportunity and potential growth.
d.   To describe the pain points and challenges addressed by the startup's solution

17. Which of the following cannot be considered as a potential source of startup financing?
a.   Bank loans
b.   Personal financing
c.   Crowdfunding
d.   Government grants

18. A Unicorn is a privately held start-up company which has achieved a valuation of _____
a.   Rs.100 crores
b.   Rs.1,000 crores
c.   USD 1 Million
d.   USD 1 Billion

19. What is a key benefit of effective succession planning?
a.   Reducing the need for performance evaluations.
b.   Creating a hierarchical leadership structure.
c.   Enhancing employee engagement and retention.
d.   Eliminating the need for cross-training.

20. What does the term "Burn Rate" refer to in the context of a startup pitch presentation?
a.   The rate at which a startup spends its available cash.
b.   The speed at which a startup's revenue grows.
c.   The time it takes for a startup to become profitable.
d.   The valuation of a startup in its latest funding round.

21. In a startup pitch presentation, what does the term "TAM" stand for?
a.   Total Addressable Market
b.   Target Audience Measurement
c.   Total Available Margin
d.   Time Allocation Management

Answer:

1.	Utilizing personal savings and revenue to fund initial operations
2.	Crowdfunding
3.	Extreme
4.	Angel investors can only be individuals **Explanation:** Though angel investors usually represent individuals, the entity that actually provides the fund may be a limited liability company, a business, a trust or an investment fund, among many other kinds of vehicles
5.	Access to mentorship, expertise and industry connections
6.	VC would be able to easily liquidate their holdings due to availability of many buyers for their stake
7.	10 years
8.	Vendor Financing
9.	Offshore funds (Unified structure) invest directly in Indian startups from a foreign entity, while the offshore structure involves investing in locally managed trust which in turn investments in Indian startups
10.	Public Limited Company
11.	Angel investors provide early-stage funding, often at the seed or startup phase, while VCs invest in later stages.
12.	Equity dilution and loss of ownership stake for founders

13.	100 crores
14.	Factoring accounts receivables
15.	USD 10 Billion
16.	To describe the pain points and challenges addressed by the startup's solution
17.	Government Grants
18.	USD 1 Billion
19.	Enhancing employee engagement and retention
20.	The rate at which a startup spends its available cash
21.	Total Addressable Market