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Question 1 What are the main responsibilities of a Chief Financial Officer of an organisation?

Answer

Responsibilities of Chief Financial Officer (CFO): The chief financial officer of anorganisation plays an important role in the company's goals, policies, and financial success. His main responsibilities include:

(a) Financial analysis and planning: Determining the proper amount of funds to be employedin the firm.

(b) Investment decisions: Efficient allocation of funds to specific assets.

(c) Financial and capital structure decisions: Raisingof funds on favourable terms as possible, i.e., determining the composition of liabilities.

(d) Management of financial resources (such as working capital).

(e) Risk Management: Protecting assets.

Question 2

"The profit maximization is not an operationally feasible criterion." Comment on it.

Answer

"The profit maximisation is not an operationally feasible criterion." This statement is true because Profit maximisation can be a short-term objective for any organisation and cannot be its sole objective. Profit maximization fails to serve as an operational criterion for maximizing the owner's economic welfare. It fails to provide an operationally feasible measure for ranking alternative courses of action in terms of their economic efficiency. It suffers from the following limitations:

(i) Vague term: The definition of the term profit is ambiguous. Does it mean short term orlong term profit? Does it refer to profit before or after tax? Total profit or profit per share?

(ii) Timing of Return: The profit maximization objective does not make distinction between returns received in different time periods. It gives no consideration to the time value of money, and values benefits received today and benefits received after a period as the same.

(iii) It ignores the risk factor.

(iv) The term maximization is also vague.

Question 3

Discuss emerging issues affecting the future role of Chief Financial Officer (CFO).

Answer

Emerging Issues/Priorities Affecting the Future Role of Chief Financial Officer (CFO)

(i) **Regulation:** Regulation requirements are increasing and CFOs have an increasingly personal stake in regulatory adherence.

(ii) **Globalisation:** The challenges of globalisation are creating a need for finance leaders to develop a finance function that works effectively on the global stage and that embraces diversity.

(iii) **Technology:** Technology is evolving very quickly, providing the potential for CFOs to reconfigure finance processes and drive business insight through 'big data' and analytics.

(iv) **Risk:** The nature of the risks that organisations face is changing, requiring more effective risk management approaches and increasingly CFOs have a role to play in ensuring an appropriate corporate ethos.

(v) **Transformation:** There will be more pressure on CFOs to transform their finance functions to drive a better service to the business at zero cost impact.

(vi) **Stakeholder Management**: Stakeholder management and relationships will become important as increasingly CFOs become the face of the corporate brand.

(vii) **Strategy:** There will be a greater role to play in strategy validation and execution, because

the environment is more complex and quick changing, calling on the analytical skills CFOscan bring.

(viii) **Reporting:**

Reporting requirements will broaden and continue to be burdensome for CFOs.

(ix) **Talent and Capability**: A brighter spotlight will shine on talent, capability and behavioursin the top finance role.

Question 4

A company offers a Fixed deposit scheme whereby Rs10,000 matures to Rs12,625 after 2 years, on a half-yearly compounding basis. If the company wishes to amend the scheme by compounding interest every quarter, what will be the revised maturity value?

Answer

Computation of Rate of Interest and Revised Maturity Value

Principal = Rs 10,000Amount = Rs 12,625

$$10{,}000 = \frac{12{,}625}{(1+i)^4}$$

$P_n = A \times (PVF_{n,i})$

$10{,}000 = 12{,}625\ (PVF_{4,i})$

$0.7921 = (PVF_{4,i})$

According to the Table on Present Value Factor ($PVF_{4,i}$) of a lump sum of ₹ 1, a PVF of 0.7921 for half year at interest (i) = 6 percent. Therefore, the annual interest rate is 2 × 0.06 = 12 percent.

i = 6% for half year

i = 12% for full year.

Therefore, Rate of Interest = 12% per annum

$$\text{Revised Maturity Value} = 10{,}000\left(1+\frac{12}{100}\times\frac{1}{4}\right)^{2\times4}$$

$$= 10{,}000\left(1+\frac{3}{100}\right)^{8}$$

$$= 10{,}000\ (1.03)^8$$

$$= 10{,}000 \times 1.267 \text{ [Considering } (CVF_{8,3}) = 1.267]$$

Revised Maturity Value = 12,670.

Question 5

X is invested Rs2,40,000 at annual rate of interest of 10 percent. What is the amount after 3 years if the compounding is done?

(i) Annually

(ii) Semi-annually.

Answer

Computation of Future Value

Principal (P) = Rs 2,40,000

Rate of Interest (ĭ) = 10% p.a. Time period (n)= 3 years Amount if compounding is done:

(i) Annually

$$\text{Future Value} = P(1 + ĭ)n$$

$$= 2,40,000\ (1 + \left(1+\frac{10}{100}\right)^3$$

$$= 2,40,000\ (1 + 0.1)^3$$

$$= 2,40,000 \times 1.331 = ₹\ 3,19,440$$

(ii) Semi-Annually

$$\text{Future Value} = 2,40,000\ \left(1+\frac{10}{100x2}\right)^{3x2}$$

$$= 2,40,000\ (1 + 0.05)^6$$

$$= 2,40,000 \times (1.05)^6$$

$$= 2,40,000 \times 1.3401$$

$$= ₹\ 3,21,624$$

Question 6

Why money in the future is worth less than similar money today? Give the reasonsand explain.

Answer

Money in the Future is worth less than the Similar Money Today due to several reasons:

Risk There is uncertainty about the receipt of money in future.

Preference For Present Consumption Most of the persons and companies in general, prefer

current consumption over future consumption.

Inflation In an inflationary period a rupee today represents a greater real purchasing power than a rupee a year hence.

Investment Opportunities Most of the persons and companies have a preference for present money because of availabilities of opportunities of investment for earning additional cash flow.

Question 7

Discuss the financial ratios for evaluating company performance on operating efficiency and liquidity position aspects.

Answer

Financial ratios for evaluating performance on operational efficiency and liquidity position aspects are discussed as:

Operating Efficiency: Ratio analysis throws light on the degree of efficiency in the management and utilization of its assets. The various activity ratios (such as turnover ratios) measure this kind of operational efficiency. These ratios are employed to evaluate the efficiency with which the firm manages and utilises its assets. These ratios usually indicate the frequency of sales with respect to its assets. These assets may be capital assets or working capital or average inventory. In fact, the solvency of a firm is, in the ultimate analysis, dependent upon the sales revenues generated by use of its assets – total as well as its components.

Liquidity Position: With the help of ratio analysis, one can draw conclusions regarding liquidity position of a firm. The liquidity position of a firm would be satisfactory, if it is able to meet its current obligations when they become due. Inability to pay-off short-term liabilities affects its credibility as well as its credit rating. Continuous default on the part of the business leads to commercial bankruptcy. Eventually such commercial bankruptcy may lead to its sickness and dissolution. Liquidity ratios are current ratio, liquid ratio and cash to current liability ratio. These ratios are particularly useful in credit analysis by banks and other suppliers of short-term loans.

Question 8

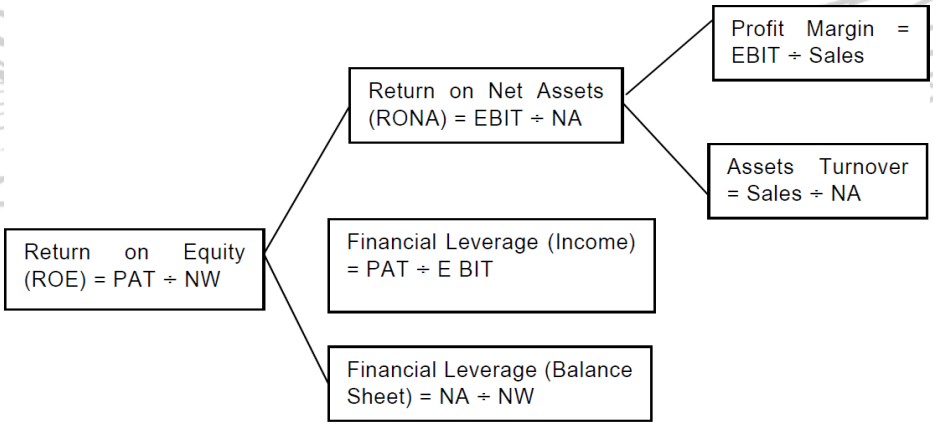
Diagrammatically present the DU PONT CHART to calculate return on equity.

Answer

Du Pont Chart

There are three components in the calculation of return on equity using the traditional DuPont model- the net profit margin, asset turnover, and the equity multiplier. By examining each input individually, the sources of a company's return on equity can be discovered and compared to its competitors.

Return on Equity = (Net Profit Margin) (Asset Turnover) (Equity Multiplier)



Du Pont Chart

Question 9

Discuss the composition of Return on Equity (ROE) using the DuPont model.

Answer

Composition of Return on Equity using the DuPont Model

There are three components in the calculation of return on equity using the traditional DuPont model- the net profit margin, asset turnover, and the equity multiplier. By examining each input individually, the sources of a company's return on equity can be discovered and compared to its competitors.

(a) Net Profit Margin: The net profit margin is simply the after-tax profit a company generates for each rupee of revenue.

Net profit margin = Net Income ÷ Revenue

Net profit margin is a safety cushion; the lower the margin, lesser the room for error.

(b) Asset Turnover: The asset turnover ratio is a measure of how effectively a company converts its assets into sales. It is calculated as follows:

Asset Turnover = Revenue ÷ Assets

The asset turnover ratio tends to be inversely related to the net profit margin; i.e., the higher the net profit margin, the lower the asset turnover.

(c) Equity Multiplier: It is possible for a company with terrible sales and margins to take on excessive debt and artificially increase its return on equity. The equity multiplier, a measure of financial leverage, allows the investor to see what portion of the return on equity is the result of debt. The equity multiplier is calculated as follows:

Equity Multiplier = Assets ÷ Shareholders' Equity.

Calculation of Return on Equity

To calculate the return on equity using the DuPont model, simply multiply the three components (net profit margin, asset turnover, and equity multiplier.) Return on Equity = Net profit margin× Asset turnover × Equity multiplier

Question 10

Explain briefly the limitations of Financial ratios.

Answer

Limitations of Financial Ratios

The limitations of financial ratios are listed below:

(a) Diversified product lines: Many businesses operate a large number of divisions in quite different industries. In such cases, ratios calculated on the basis of aggregate data cannot be used for inter-firm comparisons.

(b) Financial data are badly distorted by inflation: Historical cost values may be substantially different from true values. Such distortions of financial data are also carried in the financial ratios.

(c) Seasonal factors may also influence financial data.

(d) To give a good shape to the popularly used financial ratios (like current ratio, debt- equity ratios, etc.): The business may make some year-end adjustments. Such window dressingcan

change the character of financial ratios which would be different had there been nosuch change.

(e) Differences in accounting policies and accounting period: It can make the accounting data of two firms non-comparable as also the accounting ratios.

(f) There is no standard set of ratios against which a firm's ratios can be compared:

Sometimes a firm's ratios are compared with the industry average. But if a firm desires to be above the average, then industry average becomes a low standard. On the other hand, for a below average firm, industry averages become too high a standard to achieve.

Question 11

Explain the important ratios that would be used in each of the following situations:

(i) A bank is approached by a company for a loan of Rs50 lakhs for working capital purposes.

(ii) A long term creditor interested in determining whether his claim is adequately secured.

(iii) A shareholder who is examining his portfolio and who is to decide whether he should hold or sell his holding in the company.

(iv) A finance manager interested to know the effectiveness with which a firm uses its available resources.

Answer

Important Ratios used in different situations

(i) Liquidity Ratios- Here Liquidity or short-term solvency ratios would be used by the bankto check the ability of the company to pay its short-term liabilities. A bank may use Current ratio and Quick ratio to judge short terms solvency of the firm.

(ii) Capital Structure/Leverage Ratios- Here the long-term creditor would use the capital structure/leverage ratios to ensure the long term stability and structure of the firm. A long term creditors interested in the determining whether his claim is adequately secured may use Debt-service coverage and interest coverage ratio.

(iii) Profitability Ratios- The shareholder would use the profitability ratios to measure the profitability or the operational efficiency of the firm to see the final results of business operations. A shareholder may use return on equity, earning per share and dividend per share.

(iv) Activity Ratios- The finance manager would use these ratios to evaluate the efficiency with which the firm manages and utilises its assets. Some important ratios are (a) Capital turnover ratio (b) Current and fixed assets turnover ratio (c) Stock, Debtors and Creditors turnover ratio.

Q 12: a. (i) explain the various types of externalities.

(ii) Which method is used in India for measurement of National Income? Also, state the method which is considered the most suitable for measurement of National Income of the developed economies.

Ans: (i) The various types of Externalities

An externality is a cost or benefit of an economic activity experienced by an unrelated third party who did not choose to incur that cost or benefit. These costs and benefits are not reflected in market prices.

Externalities can be positive or negative. Negative externalities occur when the action of one party imposes costs on another party. Positive externalities occur when the action of one party confers benefits on another party.

The four possible types of externalities are:

(a) Negative production externalities

(b) Positive production externalities

(c) Negative consumption externalities,

(d) Positive consumption externalities

(a) Negative Production Externalities

A negative production externality initiated in production which imposes an external cost on others may be received by another in consumption or production. As an example, a negative production externality occurs when a factory discharges untreated waste water into a nearby river and pollutes the water.

• • This negative externality is said to be received in consumption when it causes health hazards for people who use the water for drinking and bathing.

• • This negative externality is said to be received in production when pollution in the river affects fish output and loss of fish resources resulting in less catch for fishermen.

(b) Positive production externalities

A positive production externality initiated in production that confers external benefits on others

may be received in production or in consumption. For example, positive production externality occurs when a firm offers training to its employees for increasing their skills. Training generates positive benefits on the productive efficiency of other firms when they hire such workers as they change their jobs.

• • A positive production externality is received in consumption when an individual raises an attractive garden and the persons walking by enjoy the garden.

(b) Positive production externalities

A positive production externality initiated in production that confers external benefits on others may be received in production or in consumption. For example, positive production externality occurs when a firm offers training to its employees for increasing their skills. Training generates positive benefits on the productive efficiency of other firms when they hire such workers as they change their jobs.

• • A positive production externality is received in consumption when an individual raises an attractive garden and the persons walking by enjoy the garden.

(d) Positive consumption externalities

A positive consumption externality occurs when an individual's consumption increases the well-being of others but the individual is not compensated by those others. For example, if people get immunized against contagious diseases, they would confer a social benefit on others as well by preventing others from getting infected.

• • Consumption of the services of a health club by the employees of a firm would result in an external benefit to the firm in the form of increased efficiency and productivity.

(ii) The method used in India for measurement of National Income

In India, the Central Statistics Office under the Ministry of Statistics and Programme Implementation is responsible for macro-economic data gathering and statistical record keeping.

Since reliable statistical data are not available, it is not possible to estimate India's national income wholly by one method. Therefore, a combination of output method and income method is used. The value-added method is used largely in the commodity producing sectors like agriculture and manufacturing. Thus, in agricultural sector, net value added is estimated by the production method, in small scale sector net value added is estimated by the income method and in the construction sector net value added is estimated by the expenditure method also.

The method which is considered suitable for measurement of National Income of developed

economies:

Income method may be most suitable for developed economies where data in respect of factor income are readily available. With the growing facility in the use of the commodity flow method of estimating expenditures, an increasing proportion of the national income is being estimated by expenditure method.

Q 13: (a) (i) Define common resources. Why are they overused?

(ii) Explain the free rider problem. Give examples

(b) Distinguish between Leakages and Injections in the circular flow of income?

(c) Differentiate Trade- Related Investment Measures (TRIMS) and Trade-Related Aspects of Intellectual Property Rights (TRIPS).

Ans: (a) (i) Common access resources or common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption lessens the benefits available for others. Since price mechanism does not apply to 'common resources', producers and consumers do not pay for these resources and therefore, they overuse them and cause their depletion and degradation.

(ii) The incentive to let other people pay for a good or service, the benefits of which are enjoyed by an individual is known as the free rider problem. In other words, free riding is 'benefiting from the actions of others without paying'. Example is national defence. The government provides defence for all its citizens regardless of much they contribute in tax es. Another example is Wikipedia- few people contribute (financially or otherwise), but everyone gets to use it.

(b) Leakages are withdrawals from the economy as a result of taxation, spending on imports, and monetary savings. It reduces the flow of income. On the other hand, Injections are additions and contributions to the economy through government spending, money from exports, and investments made by firms. Injections increase the flow of income.

(c) Trade-Related Investment Measures (TRIMs) is an agreement on trade related investment measures which specifies the rule that are applicable to domestic regulation a country applies to foreign investors. The agreement is applicable to all the members of WTO. It expands

disciplines governing investment measures in relation to cross-border investments by stipulating that countries receiving foreign investments shall not impose investment measures such as requirements, conditions and restrictions inconsistent with the provisions of the principle of national treatment and general elimination of quantitative restrictions. On the other hand, Trade - Related Aspects of Intellectual Property Rights (TRIPS) is an international agreement among various members of WTO on intellectual property rights. It is one of the most comprehensive multilateral agreements on intellectual rights. It stipulates most -favoured-nation treatment and national treatment for intellectual properties, such as copyright, trademarks, geographical indications, industrial designs, patents, IC layout designs and undisclosed information.

Question 14

Using the following data, complete the Balance Sheet given below:

Gross Profits	Rs54,000
Shareholders' Funds	Rs6,00,000
Gross Profit margin	20%
Credit sales to Total sales	80%
Total Assets turnover	0.3 times
Inventory turnover	4 times
Average collection period (a 360 daysyear)	20 days
Current ratio	1.8
Long-term Debt to Equity	40%

Balance Sheet

Liabilities Amount	(Rs)	Assets Amount	(Rs)
Creditors	……	Cash	……
Long-term debt	……	Debtors	……

Shareholders' funds …… Inventory Fixed assets ……

……

Answer

Gross Profits Rs 54,000

Gross Profit Margin 20%

Sales = Gross Profits / Gross Profit Margin = Rs 54,000 / 0.20 = Rs 2,70,000

Credit Sales to Total Sales	= 80%
∴ Credit Sales	= ₹ 2,70,000×0.80 = ₹ 2,16,000
Total Assets Turnover	= 0.3 times
∴ Total Assets	$= \frac{\text{Sales}}{\text{Total Assets Turnover}}$
	$= \frac{₹\ 2,70,000}{0.3}$
	= ₹ 9,00,000
Sales – Gross Profits	= COGS
∴ COGS	= ₹ 2, 70,000 – 54,000
	= ₹ 2, 16,000
Inventory turnover	= 4 times
Inventory	$= \frac{\text{COGS}}{\text{Inventory turnover}} = \frac{2,16,000}{4}$
	= ₹ 54,000

Average Collection Period	= 20 days
∴ Debtors turnover	$= \frac{360}{\text{Average Collection Period}}$
	= 360/20=18
∴ Debtors	$= \frac{\text{Credit Sales}}{\text{Debtors turnover}}$
	$= \frac{₹\ 2,16,000}{18}$
	= ₹12,000
Current ratio	= 1.8
1.8	$= \frac{\text{Debtors} + \text{Inventory} + \text{Cash}}{\text{Creditors}}$
1.8 Creditors	= (₹12,000 + ₹54,000 + Cash)
1.8 Creditors	= ₹66,000 + Cash
Long-term Debt to Equity	= 40%
Shareholders Funds	= ₹6, 00,000

∴ Long-term Debt = ₹6, 00,000×40%
= ₹2, 40,000
Creditors (Balance figure) = 9, 00,000 – (6, 00,000 + 2, 40,000)
= ₹60,000
∴ Cash = (60,000×1.8) – 66,000
= ₹42,000

Balance Sheet (in ₹)

Creditors (Bal. Fig)	60,000	Cash	42,000
		Debtors	12,000
Long- term debt	2,40,000	Inventory	54,000
Shareholders' funds	6,00,000	Fixed Assets (Bal fig.)	7,92,000
	9,00,000		9,00,000

Question 15

JKL Limited has the following Balance Sheets as on March 31, 2006 and March 31, 2005:

Balance Sheet

	₹in lakhs	
	March 31, 2006	*March 31, 2005*
Sources of Funds:		
Shareholders Funds	*2,377*	*1,472*
Loan Funds	*3,570*	*3,083*
	5,947	*4,555*
Applications of Funds:		
Fixed Assets	*3,466*	*2,900*
Cash and bank	*489*	*470*
Debtors	*1,495*	*1,168*
Stock	*2,867*	*2,407*
Other Current Assets	*1,567*	*1,404*
Less: Current Liabilities	*(3,937)*	*(3,794)*
	5,947	*4,555*

The Income Statement of the JKL Ltd. for the year ended is as follows:

	₹in lakhs	
	March 31, 2006	*March 31, 2005*
Sales	*22,165*	*13,882*
Less: Cost of Goods sold	*20,860*	*12,544*
Gross Profit	*1,305*	*1,338*
Less: Selling, General and Administrative expenses	*1,135*	*752*
Earnings before Interest and Tax (EBIT)	*170*	*586*
Interest Expense	*113*	*105*
Profits before Tax	*57*	*481*
Tax	*23*	*192*
Profits after Tax (PAT)	*34*	*289*

Required:

(i) Calculate for the year 2005-06:

(a) Inventory turnover ratio

(b) Financial Leverage

(c) Return on Investment (ROI)

(d) Return on Equity (ROE)

(e) Average Collection period.

(ii) Give a brief comment on the Financial Position of JKL Limited.

Answer

Ratios for the year 2005-2006

(i) (a) Inventory turnover ratio

$$= \frac{\text{COGS}}{\text{Average Inventory}} = \frac{20,860}{\frac{(2,867 + 2,407)}{2}} = 7.91$$

(b)

Financial leverage	*2005-06*	*2004-05*
$= \frac{\text{EBIT}}{\text{EBIT} - \text{I}}$	$= \frac{170}{57}$	$= \frac{586}{481}$
	= 2.98	= 1.22

(c) ROI

$$= \frac{\text{NOPAT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average Capital employed}}$$

$$= \frac{57 \times (1 - .4)}{22,165} \times \frac{22,165}{\frac{(5,947 + 4,555)}{2}}$$

$$= \frac{34.2}{22,165} \times \frac{22,165}{5,251}$$

= 0.65%

(d) ROE

$$= \frac{\text{PAT}}{\text{Average shareholders' funds}}$$

$$= \frac{34}{\frac{(2,377 + 1,472)}{2}}$$

$$= \frac{34}{1,924.5}$$

= 1.77%

(e) Average Collection Period*

$$\text{Average Sales per day} = \frac{22,165}{365} = ₹\ 60.73 \text{ lakhs}$$

$$\text{Average collection period} = \frac{\text{Average Debtors}}{\text{Average sales per day}}$$

$$= \frac{\frac{(1,495 + 1,168)}{2}}{60.73}$$

$$= \frac{1331.5}{60.73}$$

$$= 22 \text{ days}$$

(***Note:** In the above solution, 1 year = 365 days has been assumed. Alternatively, some candidates may give the solution on the basis 1 year = 360 days.)*

(ii) Brief Comment on the financial position of JKL Ltd.

The profitability of operations of the company are showing sharp decline due to increase in operating expenses. The financial and operating leverages are becoming adverse. The liquidity of the company is under great stress.

Question 16

ABC Limited has an average cost of debt at 10 per cent and tax rate is 40 per cent. The Financial leverage ratio for the company is 0.60. Calculate Return on Equity (ROE) if its Return on Investment (ROI) is 20 per cent.

Answer

ROE = [ROI + {(ROI – r) D/E}] (1 – t)

= [0.20 + {(0.20 – 0.10) 0.60}] (1 – 0.40)

=[0.20 + 0.06] 0.60 = 0.1560

ROE = 15.60%

Question 17

The following information relates to Beta Ltd. for the year ended 31st March 2013:Net Working Capital Rs12,00,000

Fixed Assets to Proprietor's Fund Ratio 0.75 Working Capital Turnover Ratio 5 Times Return on Equity (ROE) 15%

There is no debt capital.

You are required to calculate:

(i) Proprietor's Fund

(ii) Fixed Assets

(iii) Net Profit Ratio.

Answer

(i) Calculation of Proprietor's Fund

Since Ratio of Fixed Assets to Proprietor's Fund = 0.75

Therefore, Fixed Assets = 0.75 Proprietor's Fund

Net Working Capital = 0.25 Proprietor's Fund

12,00,000 = 0.25 Proprietor's Fund

Therefore, Proprietors Fund $= \frac{12,00,000}{0.25} = 48,00,000$

(ii) Calculation of Fixed Assets

Fixed Assets = 0.75 Proprietor's Fund

= 0.75 x 48,00,000 = 36,00,000

(iii) Calculation of Net Profit Ratio

Net Working Capital = 0.25 x 48,00,000 = 12,00,000

Working Capital Turnover Ratio $= \frac{\text{Sales}}{\text{Working Capital}}$

∴ Sales = 60,00,000

ROE $= \frac{\text{PAT}}{\text{Equity}}$

0.15 $= \frac{\text{PAT}}{48,00,000}$

PAT = 7,20,000

Net Profit Ratio $= \frac{\text{Net Profit}}{\text{Sales}} \times 100$

$= \frac{7,20,000}{60,00,000} \times 100$

Net Profit Ratio = 12%

[**Note:** Fixed Assets may be computed alternatively by (Net Working Capital × Fixed Assetsto Proprietor's Fund Ratio) and Proprietor's Fund by (Fixed Assets + Net Working Capital)].

Question 18

NOOR Limited provides the following information for the year ending 31st March, 2014:

Equity Share Capital	Rs25,00,000
Closing Stock	Rs6,00,000
Stock Turnover Ratio	5 times
Gross Profit Ratio	25%
Net Profit / Sale	20%
Net Profit / Capital	¼

You are required to prepare:

Trading and Profit & Loss Account for the year ending 31st March, 2014.

Answer Working Notes:

(i) $\frac{\text{Net Profit}}{\text{Capital}} = \frac{1}{4}$

$\frac{\text{Net Profit}}{25,00,000} = \frac{1}{4}$

Net Profit = 6,25,000

(ii) $\frac{\text{Net Profit}}{\text{Sale}} = 20\%$

Sale = $\frac{6,25,000}{0.20} = 31,25,000$

(iii) Gross Profit Ratio = $\frac{\text{Gross Profit}}{\text{Sales}} \times 100$

25 = $\frac{\text{Gross Profit}}{31,25,000} \times 100$

Gross Profit = $\frac{31,25,000 \times 25}{100}$

= 7,81,250

(iv) Stock Turnover = $\frac{\text{COGS}}{\text{Average Stock}}$

5 = $\left(\frac{31,25,000 - 7,81,250}{\text{Average Stock}}\right)$

Average Stock = $\frac{23,43,750}{5}$

= 4,68,750

(v) Average Stock = $\frac{\text{Closing Stock} + \text{Opening Stock}}{2}$

4,68,750 = $\frac{6,00,000 + \text{Opening Stock}}{2}$

Opening Stock = 9,37,500 – 6,00,000 = 3,37,500

Trading A/c for the year ending 31st March, 2014

	₹		₹
To Opening Stock	3,37,500	By Sales	31,25,000
To Purchases (Balancing figure)	26,06,250	By Closing Stock	6,00,000
To Gross Profit c/f to P&L A/c	7,81,250		-
	37,25,000		37,25,000

Profit & Loss A/c for the year ending 31st March, 2014

	₹		₹
To Miscellaneous Expenses (balancing figure)	1,56,250	By Gross Profit b/f from Trading A/c	7,81,250
To Net Profit	6,25,000		-
	7,81,250		7,81,250

Question 19

Distinguish between Funds Flow Statement and Cash Flow Statement.

Answer

Differentiation between Funds Flow Statement and Cash Flow Statement

(a) Funds flow statement is based on the accrual accounting system. In case of preparation of cash flow statement all transactions affecting the cash equivalents only are taken into consideration.

(b) Funds flow statement analyses the sources and applications of funds which are long term in nature and the net increase in long-term funds will be reflected on the working capital of the firm. The Cash flow statement will only consider the increase or decrease in current assets and current liabilities in calculating the cash flow of funds from operations.

(c) Funds flow analysis is more useful for long-range financial planning. Cash flow analysis is more useful for identifying and correcting the current liquidity problems of the firm.

(d) Funds flow statement tallies the funds generated from various sources with various uses to which they are put. Cash flow statement tallies difference between opening balance of cash and closing balance of cash by proceeding through sources and uses.

Question 20

From the information contained in Income Statement and Balance Sheet of 'A' Ltd., prepare Cash Flow Statement:

Income Statement for the year ended March 31, 2006

		Rs.
Net Sales	(A)	2,52,00,000
Less:		
Cash Cost of Sales		1,98,00,000
Depreciation		6,00,000
Salaries and Wages		24,00,000
Operating Expenses		8,00,000
Provision for Taxation		8,80,000
	(B)	2,44,80,000

Net Operating Profit (A – B)		7,20,000
Non-recurring Income – Profits on sale of equipment		1,20,000

		8,40,000
Retained earnings and profits brought forward		15,18,000
		23,58,000
Dividends declared and paid during the year		7,20,000
Profit and Loss Account balance as on March 31, 2006		16,38,000

Balance Sheet a son

Assets	March 31, 2005	March 31, 2006
	(Rs.)	(Rs.)
Fixed Assets:		
Land	4,80,000	9,60,000
Buildings and Equipment	36,00,000	57,60,000
Current Assets:		
Cash	6,00,000	7,20,000
Debtors	16,80,000	18,60,000
Stock	26,40,000	9,60,000
Advances	78,000	90,000
	90,78,000	1,03,50,000

Balance Sheet ason

Liabilities and Equity	March 31, 2005	March 31, 2006
	(Rs)	(Rs)
Share Capital	36,00,000	44,40,000
Surplus in Profit and Loss Account	15,18,000	16,38,000
Sundry Creditors	24,00,000	23,40,000
Outstanding Expenses	2,40,000	4,80,000
Income-tax payable	1,20,000	1,32,000

Accumulated Depreciation		
on Buildings and Equipment	12,00,000	13,20,000
	90,78,000	1,03,50,000

The original cost of equipment sold during the year 2005-06 was Rs7,20,000.

Answer

Cash Flow Statement of Company A Ltd. for the year ending March 31, 2006 Cash flows from Operating Activities

	Rs.
Net Profits before Tax and Extra-ordinary Item	16,00,000
Add: Depreciation	6,00,000
Operating Profits before Working Capital Changes	22,00,000
Increase in Debtors	(1,80,000)
Decrease in Stock	16,80,000
Increase in Advances	(12,000)
Decrease in Sundry Creditors	(60,000)
Increase in Outstanding Expenses	2,40,000
Cash Generated from Operations	38,68,000
Income tax Paid	8,68,000
Net Cash from Operations	30,00,000

Cash flows from Investment Activities

	Rs.
Purchase of Land	(4,80,000)
Purchase of Buildings and Equipment	(28,80,000)
Sale of Equipment	3,60,000
Net Cash used in Investment Activities	(30,00,000)

Cash flows from Financing Activities

		Rs.
Issue of Share Capital	8,40,000	
Dividends Paid	(7,20,000)	
Net Cash from Financing Activities		1,20,000
Net increase in Cash and Cash Equivalents		1,20,000
Cash and Cash Equivalents at the beginning		6,00,000
Cash and Cash Equivalents at the end		7,20,000

Buildings and EquipmentAccount

	Rs		Rs
Balance b/d	36,00,000	Sale of Asset	7,20,000
Cash/Bank (purchase) (Balancingfigure)	28,80,000	Balance c/d	57,60,000
	64,80,000		64,80,000

Accumulated Depreciation onBuildings and Equipment Account

	Rs			Rs
Sale of Asset		Balance b/d		12,00,000
(Accumulateddepreciation)	4,80,000	Profit and Loss (Provisional)		6,00,000
Balance c/d	13,20,000			
	18,00,000			18,00,000

Sale of Asset Account

	Rs
Original Cost	7,20,000

Less: Accumulated Depreciation	4,80,000
Net Cost	2,40,000
Profit on Sale of Asset	1,20,000
Sale Proceeds from Asset Sales	3,60,000

Income Tax Payable Account

	Rs		Rs
Bank A/c (b/f)Balance c/d	8,68,000 1,32,000	Balance b/d Provision for TaxA/c	1,20,000 8,80,000
	10,00,000		10,00,000

Question 21

The Balance Sheet of JK Limited as on 31st March, 2005 and 31st March, 2006 aregiven below:

Balance Sheetason (Rs'000)

Liabilities	31.03.05	31.03.06	Assets	31.03.05	31.03.06
Share Capital	1,440	1,920	Fixed Assets	3,840	4,560
Capital Reserve	[illegible]	48	Less: Depreciation	1,104	1,392
General	816	960		2,736	3,168
Reserve					
Profit and Loss	288	360	Investment	480	384
Account					
9% Debenture	960	672	Cash	210	312
Current Liabilities	576	624	Other Current Assets		

Proposed Dividend	144	174	(including Stock)	1,134	1,272
Provision for Tax	432	408	Preliminary Expenses	96	48
Unpaid Dividend	-	18			
	4,656	5,184		4,656	5,184

Additional Information:

(i) During the year 2005-2006, Fixed Assets with a book value of Rs2,40,000 (accumulated depreciation Rs84,000) was sold forRs1,20,000.

(ii) Provided Rs4,20,000asdepreciation.

(iii) Some investments are sold at a profit of Rs48,000and Profit was credited to Capital Reserve.

(iv) It decided that stocks be valued at cost, whereas previously the practice was to value stock at cost less 10 per cent. The stock was Rs2,59,200as on 31.03.05.The stock as on31.03.06 was correctly valued atRs3,60,000.

(v) It decided to write off Fixed Assets costing Rs60,000on which depreciation amountingtoRs48,000 has been provided.

(vi) Debentures are redeemed at Rs105. Required: Prepare a CashFlowStatement.

Answer

Cash flow Statement (31st March, 2006)

(A) Cashflows from OperatingActivities

Profit and Loss A/c		
(3,60,000 – (2,88,000 + 28,800)		43,200
Adjustments:		
Increase in General Reserve	1,44,000	

Depreciation	4,20,000	
Provision for Tax	4,08,000	
Loss on Sale of Machine	36,000	
Premium on Redemption of Debenture	14,400	
Proposed Dividend	1,74,000	
Preliminary Exp. w/o	48,000	
Fixed Assets w/o	12,000	12,56,400
Funds from Operation		12,99,600
Increase in Sundry Current Liabilities		48,000
Increase in Current Assets		
12,72,000 – (11,34,000 + 28,800)		(1,09,200)
Cash before Tax		12,38,400
Tax paid		4,32,000
Cash from Operating Activities		8,06,400

(B) Cash from InvestingActivities

Purchases of fixed assets	(10,20,000)	
Sale of Investment	1,44,000	
Sale of Fixed Assets	1,20,000	(7,56,000)

(c) Cash from FinancingActivities

Issue of Share Capital	4,80,000	
Redemption of Debenture	(3,02,400)	
Dividend paid	(1,26,000)	51,600
Net increase in Cash and Cash equivalents		1,02,000
Opening Cash and Cash equivalents		2,10,000
Closing Cash		3,12,000

(D) Fixed AssetsAccount

	Particulars	Rs.		Particulars	Rs.
To	Balance b/d	27,36,000	By	Cash	1,20,000
To	Purchases (Balance)	10,20,000	By	Loss on sales	36,000
			By	Depreciation	4,20,000
			By	Assets w/o	12,000
			By	Balance	31,68,000
		37,56,000			37,56,000

(E) DepreciationAccount

	Particulars	Rs.		Particulars	Rs.
To	Fixed Assets (on sales)	84,000	By	Balance b/d	11,04,000
To	Fixed Assets w/o	48,000	By	Profit and Loss a/c	4,20,000
To	Balance	13,92,000			
		15,24,000			15,24,000

Question 22

The following are the Balance Sheets of Gama Limited for the year ending March 31, 2004 and March 31,2005:

Balance Sheet ason March, 31

		2004	2005
		Rs	Rs
Capital and Liabilities			
Share Capital		6,75,000	7,87,500
General Reserves		2,25,000	2,81,250

Capital Reserve (Profit on Sale of investment)		-	11,250
Profit & Loss Account		1,12,500	2,25,000
15% Debentures		3,37,500	2,25,000
Accrued Expenses		11,250	13,500
Creditors		1,80,000	2,81,250
Provision for Dividends		33,750	38,250
Provision for Taxation		78,750	85,500
	Total	16,53,750	19,48,500
Assets			
Fixed Assets		11,25,000	13,50,000
Less: Accumulated depreciation		2,25,000	2,81,250
Net Fixed Assets		9,00,000	10,68,750
Long-term Investments (at cost)		2,02,500	2,02,500
Stock (at cost)		2,25,000	3,03,750
Debtors (net of provision for doubtful debts of		2,53,125	2,75,625
Rs45,000 and Rs56,250 respectively for 2004 and			
2005 respectively)			
Bills receivables		45,000	73,125
Prepaid Expenses		11,250	13,500
Miscellaneous Expenditure		16,875	11,250
		16,53,750	19,48,500

Additional Information:

(i) During the year 2004-05, fixed assets with a net book value of Rs11,250 (accumulated depreciation, Rs33,750) was sold forRs9,000.

(ii) During the year 2004-05, Investments costing Rs90,000were sold, and also Investments

costing Rs90,000 were purchased.

(iii) Debentures were retired at a Premium of10%.

(iv) Tax of Rs61,875was paid for2003-04.

(v) During the year 2004-05, bad debts of Rs15,750 were written off against theprovision for Doubtful Debt account.

(vi) The proposed dividend for 2003-04 was paid in2004-05.

Required:

Prepare a Funds Flow Statement (Statement of changes in Financial Position onworkingcapital basis) for the year ended March31,2005.

Answer
Computation of Funds from Operation

Profit and loss balance on March 31, 2005	Rs2,25,000
Add: Depreciation	90,000
Loss on Sale of Asset	2,250
Misc. Expenditure written off	5,625
Transfer to Reserves	56,250
Premium on Redemption of debentures	11,250
Provision for Dividend	38,250
Provision for Taxation	68,625
	4,97,250
Less: P/L balance on March 31, 2004	1,12,500
Funds from operations	3,84,750

Accumulated Depreciation A/c

To Fixed Asset A/c	33,750	By Bal. b/d	2,25,000

To Bal. c/d	2,81,250	By P/L A/c (Pro (Prov. for dep.) (Bal.Fig.)	90,000
	3,15,000		3,15,000

Fixed Assets A/c

To Bal. b/d	11,25,000	By Accumulated Depreciation A/c	33,750
		By Cash	9,000
To Bank (Purchase of	2,70,000	By P/L (Loss on sale)	2,250
Fixed Asset) (Bal. fig.)			
		By Bal. c/d	13,50,000
	13,95,000		13,95,000

Provision for Tax A/c

To Cash (tax paid)	61,875	By Bal. b/d	78,750
		By P/L A/c (Prov.)	
To Bal. c/d	85,500	(Bal. fig.)	68,625
	1,47,375		1,47,375

Statement of Changes in Working Capital

	March 31, 2004	March 31, 2005	Change in W/C	
Current Assets				
Stock	2,25,000	3,03,750	78,750	
Debtors	2,53,125	2,75,625	22,500	
Bills Receivables	45,000	73,125	28,125	
Prepaid Expenses	11,250	13,500	2,250	

	5,34,375	6,66,000	1,31,625	-
Less: Current liabilities				
Accrued Expenses	11,250	13,500	-	2,250
Creditors	1,80,000	2,81,250	-	1,01,250
	1,91,250	2,94,750	1,31,625	1,03,500
Working Capital	3,43,125	3,71,250	-	-
Increase in Working Capital	28,125	-		28,125
	3,71,250	3,71,250	1,31,625	1,31,625

Funds Flow Statement for the year ended March 31, 2005

Sources		Rs
	Working Capital from Operations	3,84,750
	Sale of Fixed Assets	9,000
	Sale of Investments	1,01,250
	Share Capital Issued	1,12,500
	Total Funds Provided (A)	Rs6,07,500
Uses		Rs
	Purchase of Fixed Assets	2,70,000
	Purchase of Investments	90,000
	Payment of Debentures (at a premium of 10%)	1,23,750
	Payment of Dividends	33,750
	Payment of Taxes	61,875
	Total Funds Applied (B)	5,79,375
	Increase in Working Capital (A-B)	Rs28,125

Question 23

Balance Sheets of RST Limited as on March 31, 2008 and March 31, 2009 are as under:

Liabilities	31.3.2008 Rs	31.3.2009 Rs	Assets	31.3.2008 Rs	31.3.2009 Rs
Equity Share Capital			Land & Building		
(Rs10 face value per share)	10,00,000	12,00,000		6,00,000	7,00,000
General Reserve	3,50,000	2,00,000	Plant & Machinery	9,00,000	11,00,000
9% Preference Share			Investments (Long-	2,50,000	2,50,000
Capital	3,00,000	5,00,000	term)		
Share Premium A/c	25,000	4,000	Stock	3,60,000	3,50,000
Profit & Loss A/c	2,00,000	3,00,000	Debtors	3,00,000	3,90,000
8% Debentures	3,00,000	1,00,000	Cash & Bank	1,00,000	95,000
Creditors	2,05,000	3,00,000	Prepaid Expenses	15,000	20,000
Bills Payable	45,000	81,000	Advance Tax	80,000	1,05,000
			Payment		
Provision for Tax	70,000	1,00,000	Preliminary	40,000	35,000
			Expenses		
Proposed Dividend	1,50,000	2,60,000			
	26,45,000	30,45,000		26,45,000	30,45,000

(i) Depreciationchargedonbuildingandplantandmachineryduringtheyear2008- 09were Rs50,000 and Rs1,20,000 respectively.

(ii) During the year an old machine costing Rs1,50,000was sold for Rs32,000. Itswritten down value was Rs40,000on date of sale.

(iii) Duringtheyear,incometaxfortheyear2007-08wasassessedatRs76,000.Achequeof Rs4,000 was received along with the assessment order towards refund of income tax paid in excess, by way of advance tax in earlier years.

(iv) Proposed dividend for 2007-08 was paid during the year2008-09.

(v) 9% Preference shares of Rs3,00,000, which were due for redemption, were redeemed during the year 2008-09 at a premium of 5%, out of the proceeds of fresh issue of 9% Preference

shares.

(vi) Bonus shares were issued to the existing equity shareholders at the rate of one share for every five shares held on 31.3.2008 out of general reserves.

(vii) Debentures were redeemed at the beginning of the year at a premium of 3%.

(viii) Interim dividend paid during the year 2008-09 was Rs50,000.

Required:

(a) Schedule of Changes in Working Capital; and

(b) Fund Flow Statement for the year ended March31,2009.

Answer

(a) Schedule of Changes in Working Capital

Particulars	31.3.08	31.3.09	Effect on Working Capital	
			Increase	Decrease
	Rs	Rs	Rs	Rs
Current Assets:				
Stock	3,60,000	3,50,000	-	10,000
Debtors	3,00,000	3,90,000	90,000	-
Cash and Bank	1,00,000	95,000	-	5,000
Prepaid Expenses	15,000	20,000	5,000	-
Total (A)	7,75,000	8,55,000		
Current Liabilities:				
Creditors	2,05,000	3,00,000	-	95,000
Bills Payable	45,000	81,000	-	36,000
Total (B)	2,50,000	3,81,000		
Net Working Capital (A-B)	5,25,000	4,74,000	-	
Net Decrease in Working Capital	-	51,000	51,000	-

	5,25,000	5,25,000	1,46,000	1,46,000

(b) Funds Flow Statement for the year ended 31st March,2009

Sources of Fund	Rs
Funds from Operation	7,49,000
Issue of 9% Preference Shares	5,00,000
Sales of Plant & Machinery	32,000
Refund of Income Tax	4,000
Financial Resources Provided (A)	12,85,000
Applications of Fund	Rs.
Purchase of Land and Building	1,50,000
Purchase of Plant and Machinery	3,60,000
Redemption of Debentures	2,06,000
Redemption of Preference Shares	3,15,000
Payment of Tax	1,05,000
Payment of Interim Dividend	50,000
Payment of Dividend (2007-08)	1,50,000
Financial Resources Applied (B)	13,36,000
Net Decrease in Working Capital (A - B)	51,000

Working Notes:

Estimation of Funds from Operation		Rs
Profit and Loss A/c Balance on 31.3.2009 Add: Depreciation on Land and Building	50,000	3,00,000
Depreciation on Plant and Machinery	1,20,000	
Loss on Sale of Plant and Machinery(40,000 – 32,000)	8,000	

Preliminary Expenses written off (40,000 –35,000)	5,000	
Transfer to GeneralReserve	50,000	
ProposedDividend	2,60,000	
Provision for Taxation	1,06,000	
InterimDividendpaid	50,000	6,49,000
		9,49,000
Less: Profit and Loss A/c balance on31.3.08		2,00,000
Funds from Operation		7,49,000

Plant & Machinery A/c

Rs		Rs	
To Balance b/d	9,00,000	By Depreciation	1,20,000
To Bank (Purchase	3,60,000	By Bank (Sale)	32,000
(Bal. Fig.)		By P/L A/c (Loss on Sale)	8,000
		By Balance c/d	11,00,000
	12,60,000		12,60,000

Provision for Taxation A/c

Rs		Rs	
To Advance tax payment A/c	76,000	By Balance b/d	70,000
To Balance c/d	1,00,000	By P/L A/c (additional provision for2007-08)	6,000
		By P/L A/c (Provision for 08-09)	1,00,000
	1,76,000		1,76,000

Advance Tax PaymentA/c

Rs		Rs	
To Balance b/d	80,000	By Provision for taxation A/c	76,000
To Bank (paid for 08-09)	1,05,000	By Bank (Refund of tax)	4,000
		By Balance c/d	1,05,000
	1,85000		1,85,000

8% Debentures A/c

Rs		Rs	
To Bank (2,00,000 x 103%)	2,06,000	By Balance b/d	3,00,000
(redemption)			
To Balance c/d	1,00,000	By Premium on redemption	
		of Debentures A/c	6,000
	3,06,000		3,06,000

9% Preference Share Capital A/c

Rs		Rs	
To Bank A/c (3,00,000 x 105%) (redemption)	3,15,000	By Balance b/d	3,00,000
To Balance c/d	5,00,000	By Premium on redemption of Preference shares A/c	15,000
		By Bank (Issue)	5,00,000
	8,15,000		8,15,000

Securities Premium A/c

Rs		Rs	
To Premium on redemption of debentures	6,000	By Balance b/d	25,000

A/c			
To Premium on redemption of preference			
shares A/c	15,000		
To Balance c/d	4,000		
	25,000		25,000

General Reserve A/c

Rs		Rs	
To Bonus to Shareholders A/c	2,00,000	By Balance b/d	3,50,000
To Balance c/d	2,00,000	By P/L A/c (transfer) b/f	50,000
	4,00,000		4,00,000

Land and Building A/c

Rs		Rs	
To Balance b/d	6,00,000	By Depreciation	50,000
To Bank (Purchase) (Bal. Fig.)	1,50,000	By Balance c/d	7,00,000
	7,50,000		7,50,000

Question 24

Balance Sheets of Star Ltd. are as under:

Balance Sheet **(in lakh Rs)**

Liabilities	**31/03/13** Rs	**31/03/14** Rs	**Assets**	**31/03/13** Rs	**31/03/14** Rs
Share Capital	24.00	30.00	Plant & Machinery	15.00	21.00
Reserve	4.50	6.00	Buildings	12.00	18.00
Profit & Loss A/c	1.80	3.00	Investments	-	3.00
Debentures	-	6.00	Sundry Debtors	21.00	15.00
Provision for Taxation	2.10	3.00	Stock	6.00	12.00
Proposed Dividend	3.00	6.00	Cash in hand/Bank	6.00	6.00
Sundry Creditors	24.60	21.00			
Total	**60.00**	**75.00**		**60.00**	**75.00**

With the help of following additional information, prepare Cash Flow Statement:

(i) Depreciation on plant and machinery was charged @ 25% on its opening balance and on building @ 10% on its openingbalance.

(ii) During the year an old machine costing Rs1,50,000 (written down value Rs60,000) was sold for Rs1,05,000.

(iii) Rs1,50,000waspaidtowardsIncome-tax,duringtheyear.

Answer

Cash Flow Statement for the year ending on March 31, 2014

	Rs in lakhs	Rs in lakhs
I.Cash flows from OperatingActivities		
Net profit made during the year (W.N.1)	8.70	
Provision for taxation made during the year	2.40	
Profit on sale of machinery	(0.60)	
Adjustment for depreciation on Machinery (W.N.2)	3.75	

Adjustment for depreciation on Land & Building	1.20	
Operating profit before change in Working Capital	15.45	
Increase in Inventory	(6.00)	
Decrease in Debtors	6.00	
Decrease in Creditors	(3.60)	
Cash generated from operations	11.85	
Income-tax paid	(1.50)	
Net cash from operating activities		10.35
II. Cash flows from Investing Activities		
Purchase of Machinery	(10.20)	
Sale of Machinery	1.05	
Purchase of Building	(7.20)	
Purchase of investments	(3.00)	
		(19.35)
III. Cash flows from FinancingActivities		
Issue of shares	6.00	
Issue of debentures	6.00	
Dividend paid	(3.00)	9.00
Net increase in cash and cash equivalent		Nil
Cash and cash equivalents at the beginning of the period		6.00
Cash and cash equivalents at the end of the period		6.00

Working Notes:

(i) **Net Profit made during the year ended31.3.2014**

	Rs in lakhs
Increase in P & L (Cr.) Balance	1.20
Add: Transfer to general reserve	1.50
Add: Provided for proposed dividend during the year	6.00
	8.70

(ii) **Plant &Machinery Account**

		Rs in lakhs				Rs in lakhs
To	Balance b/d	15.00	By	Depreciation (Bal. Fig.) [25% of 15]		3.75
To	P& L A/c	0.60				
	[1.05 less 0.45 (0.60 less depreciation 0.15)]		By	Cash/Bank A/c		1.05
To	Cash/Bank (balancing fig.)	10.20	By	Balance c/d		21.00
		25.80				25.80

(i) **Provision for Taxation Account**

		Rs in lakhs			Rs in lakhs
To	Cash/Bank (Bal. Fig.)	1.50	By	Balance b/d	2.10
To	Balance c/d	3.00	By	P & L A/c	2.40
		4.50			4.50

(ii) **Proposed Dividend Account**

		Rsin lakhs			Rsin lakhs
To	Bank	3.00*	By	Balance b/d	3.00
To	Balance c/d	6.00	By	P & L A/c (Bal. Fig.)	6.00
		9.00			9.00

* last year's proposed dividend assumed to be paid this year.

(iii) **Building Account**

		Rs in lakhs			Rs in lakhs
To	Balance b/d	12.00	By	Depreciation	1.20

To	Bank A/c (Purchase)	7.20	By	Balance c/d	18.00
		19.20			19.20

Question 25

What do you understand by Weighted Average Cost of Capital?

Answer

Weighted Average Cost of Capital

The composite or overall cost of capital of a firm is the weighted average of the costs of various sources of funds. Weights are taken in proportion of each source of funds in capital structure while making financial decisions. The weighted average cost of capital is calculated by calculating the cost of specific source of fund and multiplying the cost of each source by its proportion in capital structure. Thus, weighted average cost of capital is the weighted average after tax costs of the individual components of firm's capital structure. That is, the after tax cost of each debt and equity is calculated separately and added together to a single overall cost of capital.

Question 26

You are analysing the beta for ABC Computers Ltd. and have divided the company into four broad business groups, with market values and betas for each group.

Business group	Market value of equity	Unleveraged beta
Main frames	Rs100 billion	1.10
Personal Computers	Rs100 billion	1.50
Software	Rs50 billion	2.00
Printers	Rs150 billion	1.00

ABC Computers Ltd. had Rs50 billion in debt outstanding. Required:

(i)Estimate the beta for ABC Computers Ltd. as a Company.Is this beta going to be equal to the beta estimated by regressing past returns on ABC Computers stock against a market index. Why or whynot?

[Part (i) is out of syllabus and this topic is covered in Final Level paper]

(ii) If the treasury bond rate is 7.5%, estimate the cost of equity for ABC Computers Ltd. Estimate the cost of equity for each division. Which cost of equity would you use to value the printer division? The average market risk premium is 8.5%.

Answer

(i) Beta of ABC Computers

= 1.10×2/8 + 1.50×2/8 + 21/8 + 1× 3/8 = 1.275

Beta coefficient is a measure of volatility of securities return relative to the returns of a broad based market portfolio. Hence beta measures volatility of ABC Computers stock return against broad based market portfolio. In this case we are considering four business groups in computer segment and not a broad based market portfolio , therefore beta calculations will not be the same.

(ii) Cost of equity

= rf + avmkt risk premium
=7.5% + 1.275 8.5% = 18.34%

MainframePersonal Computers	KEKE	= 7.5% +1.10* 8.5% =16.85% =7.5% +1.5* 8.5%=20.25%
Software	KE	= 7.5% + 2 8.5% = 24.5%
Printers	KE	= 7.5% + 1 8.5% = 16%

Advise: To value printer division, the use of 16% KE is recommended.

Question 27 Z Ltd.'s operating income (before interest and tax) is Rs9,00,000. The firm's cost of debt is 10 per cent and currently firm employs Rs30,00,000 of debt. The overall cost of capital of firm is 12 per cent.

Required:
Calculate cost of equity.

Answer

Calculation of Cost of Equity

$$\text{Calculation of value of firm (v)} = \frac{\text{EBIT}}{\text{Overall cost of capital } (K_o)}$$

$$= \frac{9,00,000}{0.12} = ₹\ 75,00,000$$

Market value of equity (S) = V – Debts

= 75,00,000 – 30,00,000 = ₹ 45,00,000

Market value of debts (D) = 30,00,000

$$K_e \text{ (Cost of equity)} = K_o\left(\frac{V}{S}\right) - K_d\left(\frac{D}{S}\right)$$

$$= 0.12\left(\frac{75,00,000}{45,00,000}\right) - 0.10\left(\frac{30,00,000}{45,00,000}\right)$$

$$= 0.20 - .067 = .133 \times 100$$

K_e = 13.3%.

Question 28

ABC Ltd. wishes to raise additional finance of Rs20 lakhs for meeting its investment plans. The company has Rs4,00,000 in the form of retained earnings available for investment purposes.

The following are the further details:

- Debt equity ratio 25 : 75.
- Cost of debt at the rate of 10 percent (before tax) uptoRs2,00,000 and 13% (before tax) beyond that.
- Earnings per share, Rs12. Dividend payout 50% of earnings.
- Expected growth rate in dividend 10%.Current market price per share, Rs60.

Company's tax rate is 30% and shareholder's personal tax rate is 20%.Required:

(i) Calculate the post tax average cost of additional debt.

(ii) Calculate the cost of retained earnings and cost of equity.

(iii) Calculate the overall weighted average (after tax) cost of additional finance.

Answer

Answer		
Pattern of raising capital	=	0.25 20,00,000
Debt	=	5,00,000
Equity	=	15,00,000
Equity fund (Rs 15,00,000)		
Retained earnings	=	Rs 4,00,000

Equity (additional)	=	Rs 11,00,000
Total	=	Rs 15,00,000
Debt fund (Rs 5,00,000)		
10% debt	=	Rs 2,00,000
13% debt	=	Rs 3,00,000
Total	=	Rs 5,00,000

(i) K_d = Total Interest (1-t) / Rs5,00,000

= [20,000 + 39,000] (1-0.3)/ 5,00,000 or (41,300 / 5,00,000) 100 = 8.26%

(ii) Ke = EPS payout / mp + g = 12 (50%) / 60 100 +10% 10% + 10% =20%

Kr = Ke (1 – tp) = 20(1 0.2) = 16%

(iii) Weighted average cost of capital

	Amount	After tax	Cost
Equity Capital	11,00,000	20.00%	2,20,000
Retained earning	4,00,000	16.00%	64,000
Debt	5,00,000	8.26%	41,300
Total	20,00,000		3,25,300

Ko = (3,25,300 / 20,00,000) 100 = 16.27%

Question 29

Y Ltd. retains Rs7,50,000 out of its current earnings. The expected rate of return to the shareholders, if they had invested the funds elsewhere is 10%. The brokerage is 3% and the shareholders come in 30% tax bracket. Calculate the cost of retained earnings.

Answer

Computation of Cost of Retained Earnings (K_r)

K_r = k $(1-T_P)(1-B)$

K_r = 0.10 (1- 0.30) (1-0.03)

= 0.10 (0.70) × (0.97) = 0.0679 or 6.79%

Cost of Retained Earnings = 6.79%

Question 30

PQR Ltd. has the following capital structure on October 31, 2010:

	Rs
Equity Share Capital	20,00,000
(2,00,000 Shares of Rs10 each)	
Reserves & Surplus	20,00,000
12% Preference Shares	10,00,000
9% Debentures	30,00,000
	80,00,000

The market price of equity share is Rs30. It is expected that the company will pay next year a dividend of Rs3 per share, which will grow at 7% forever. Assume 40% income tax rate.

You are required to compute weighted average cost of capital using market value weights.

Answer

Computation of Weighted Average Cost of Capital (WACC): Existing Capital Structure

Calculation of Cost of Equity

$$\text{Cost of Equity} = \frac{D_1}{P_o} + g$$

$$= \frac{₹\ 3}{₹\ 30} + 0.07 = 0.1 + 0.07$$

$$= 0.17 = 17\%$$

	After Tax Cost	Weights	Weighted Cost
9% Debentures (K_d)	0.054*	0.3	0.0162
12% Preference Shares	0.12	0.1	0.012
Equity Capital	0.17	0.6	0.102
			0.1302

K_d = rd $(1-T_c)$ = 9% × (1 − 0.4) = 5.4% or 0.054

Weighted Average Cost of Capital = 0.1302 or 13.02%

Question 31

Beeta Ltd. has furnished the following information:

- Earning per share (ESP) Rs4
- Dividend payout ratio Rs25%
- Market price per share Rs40
- Rate of tax 30%
- Growth rate of dividend 8%

The company wants to raise additional capital of Rs10 lakhs including debt of Rs4 lakhs. Thecost of debt (before tax) is 10% uptoRs2 lakhs and 15% beyond that.

Compute the after tax cost of equity and debt and the weighted average cost of capital.

Answer

(i) Cost of Equity Share Capital (Ke)

$$K_e \text{ (after tax)} = \left(\frac{DPS}{MPS} \times 100\right) + G$$

DPS = 25% of ₹ 4 = ₹ 1.00

$$K_e = \left(\frac{1}{40} \times 100\right) + 8$$

K_e = 10.5%

(ii) Cost of Debt (K_d)

$$K_d \text{ (After tax)} = \frac{\text{Interest}}{\text{Net Proceeds}} \times 100 \times (1 - T)$$

Interest on ₹ 2,00,000 @ 10% = 20,000

Interest on ₹ 2,00,000 @ 15% = 30,000

50,000

$$K_d = \frac{50,000}{4,00,000} \times 100 \times (1 - 0.3)$$

= 8.75 %

(iii) Weighted Average Cost of Capital(WACC)

Source (1)	Amount(2) In Rs	Weights(3)	Cost of Capital (4)	Weighted Average Cost (5) = (3)x(4)
Equity	6,00,000	0.6	0.105	0.063
Debt	4,00,000	0.4	0.0875	0.035

Weighted Average Cost of Capital	**0.098 or 9.8%**

Note: Ke can be computed alternatively taking growth rate into consideration ($D_0(1+g)/P_0+g$). The values of Ke and WACC then would change accordingly as 10.7% and 9.92%respectively.]

Question 32

Discuss the major considerations in capital structure planning.

Answer

Major considerations in capital structure planning

There are three major considerations, i.e. risk, cost of capital and control, which help thefinance manager in determining the proportion in which he can raise funds from various sources.

Although, three factors, i.e., risk, cost and control determine the capital structure of a particular business undertaking at a given point of time.

Risk: The finance manager attempts to design the capital structure in such a manner, so that risk and cost are the least and the control of the existing management is diluted to the least extent. However, there are also subsidiary factors also like market ability of the issue, manoeuvrability and flexibility of the capital structure, timing of raising the funds. Risk is of two kinds, i.e., Financial risk and Business risk. Here we are concerned primarily with the financial risk. Financial risk also is of two types:

Risk of cash insolvency Riskofvariationintheexpectedearningsavailabletoequityshare-holders

Cost of Capital: Cost is an important consideration in capital structure decisions. It is obvious that a business should be at least capable of earning enough revenue to meet its cost of capital and finance its growth. Hence, along with a risk as a factor, the finance manager has to consider the cost aspect carefully while determining the capital structure.

Control: Along with cost and risk factors, the control aspect is also an important consideration in planning the capital structure. When a company issues further equity shares, it automatically dilutes the controlling interest of the present owners. Similarly, preference shareholders can have voting rights and thereby affect the composition of the Board of Directors, in case dividends on such shares are not paid for two consecutive years. Financial institutions normally stipulate that they shall have one or more directors on the Boards. Hence, when the

management agrees to raise loans from financial institutions, by implication it agrees to forego a part of its control over the company. It is obvious, therefore, that decisions concerning capital structure are taken after keeping the control factor in mind.

Question 33

Explain the assumptions of Net Operating Income approach (NOI) theory of capitalstructure.

Answer

Assumptions of Net Operating Income (NOI) Theory of Capital Structure

According to NOI approach, there is no relationship between the cost of capital and value of thefirmi.e.thevalueofthefirmisindependentofthecapitalstructureofthefirm.

Assumptions

(a) The corporate income taxes do not exist.

(b) The market capitalizes the value of the firm as whole. Thus the split between debt and equity is not important.

(c) The increase in proportion of debt in capital structure leads to change in risk perception of the shareholders.

(d) The overall cost of capital(K_o)remains constant for all degrees of debt equity mix.

Question 34

Discuss financial break-even and EBIT-EPS indifference analysis.

Answer

Financial Break-even and EBIT-EPS Indifference Analysis

Financial break-even point is the minimum level of EBIT needed to satisfy all the fixed financial charges i.e. interest and preference dividend. It denotes the level of EBIT for which firm's EPS equals zero. If the EBIT is less than the financial breakeven point, then the EPS will be negative but if the expected level of EBIT is more than the breakeven point, then more fixed costs financing instruments can be taken in the capital structure, otherwise, equity would be preferred.

EBIT-EPS analysis is a vital tool for designing the optimal capital structure of a firm. The

objective of this analysis is to find the EBIT level that will equate EPS regardless of the financing plan chosen.

$$\frac{(EBIT - I_1)(1-T)}{E_1} = \frac{(EBIT - I_2)(1-T)}{E_2}$$

Where,

EBIT = Indifference point

E_1 = Number of equity shares in Alternative 1

E_2 = Number of equity shares in Alternative 2

I_1 = Interest charges in Alternative 1

1_2 = Interest charges in Alternative 2

T = Tax-rate

Alternative 1= All equity finance

Alternative 2= Debt-equity finance.

Question 35

What is Net Operating Income (NOI) theory of capital structure? Explain the assumptions ofNet Operating Income approach theory of capital structure.

Answer

Net Operating Income (NOI) Theory of Capital Structure

According to NOI approach, there is no relationship between the cost of capital and value ofthe firm i.e. the value of the firm is independent of the capital structure of the firm.

Assumptions

(a) The corporate income taxes do not exist.

(b) The market capitalizes the value of the firm as whole. Thus the split between debt and equity is not important.

(c) The increase in proportion of debt in capital structure leads to change in risk perceptionof the shareholders.

(d) The overall cost of capital (Ko) remains constant for all degrees of debt equity mix.

Question 36

What do you mean by capital structure? State its significance in financing decision.

Answer

Concept of Capital Structure and its Significance in Financing Decision Capital structure refers to the mix of a firm's capitalisation i.e. mix of long-term sources of funds such as debentures, preference share capital, equity share capital and retained earnings for meeting its total capital requirement.

Significance in Financing Decision

The capital structure decisions are very important in financial management as they influence debt – equity mix which ultimately affects shareholders return and risk. These decisions help in deciding the forms of financing (which sources to be tapped), their actual requirements (amount to be funded) and their relative proportions (mix) in total capitalisation. Therefore, such a pattern of capital structure must be chosen which minimises cost of capital and maximises the owners' return.

Question 37

What is Over-capitalisation? State its causes and consequences.

Answer

Overcapitalization and its Causes and Consequences

It is a situation where a firm has more capital than it needs or in other words assets are worth less than its issued share capital, and earnings are insufficient to pay dividend and interest.

Causes of Over Capitalization

Over-capitalisation arises due to following reasons:

(i) Raising more money through issue of shares or debentures than company can employ profitably.

(ii) Borrowing huge amount at higher rate than rate at which company can earn.

(iii) Excessive payment for the acquisition of fictitious assets such as goodwill etc.

(iv) Improper provision for depreciation, replacement of assets and distribution of dividendsat a higher rate.

(v) Wrong estimation of earnings and capitalization.

(Note: Students may answer any two of the above reasons**) Consequences of Over-**

Capitalisation

Over-capitalisation results in the following consequences:

(i) Considerable reduction in the rate of dividend and interest payments.

(ii) Reduction in the market price of shares.

(iii) Resorting to "window dressing".

(iv) Some companies may opt for reorganization. However, sometimes the matter getsworse and the company may go into liquidation.

(Note: Students may answer any two of the above consequences**)**

Question 38

A Company needs Rs31,25,000 for the construction of new plant. The following three plansare feasible:

I The Company may issue 3,12,500 equity shares at Rs10 per share.

IIThe Company may issue 1,56,250 ordinary equity shares at Rs10 per share and 15,625 debentures of Rs,. 100 denomination bearing a 8% rate of interest.

III The Company may issue 1,56,250 equity shares at Rs10 per share and 15,625 preference shares at Rs100 epr share bearing a 8% rate of dividend.

(i) if the Company's earnings before interest and taxes are Rs62,500, Rs1,25,000, Rs2,50,000, Rs3,75,000 and Rs6,25,000, what are the earnings per share under each of threefinancial plans ? Assume a Corporate Income tax rate of 40%.

(ii) Which alternative would you recommend and why?

(iii) Determine the EBIT-EPS indifference points by formulae between Financing Plan I and Plan II and Plan I and Plan III.

Answer

(i) Computation of EPS under three-financial plans.Plan I: Equity Financing

EBIT	Rs 62,500	Rs 1,25,000	Rs 2,50,000	Rs 3,75,000	Rs 6,25,000
Interest	0	0	0	0	0
EBT	Rs 62,500	Rs 1,25,000	Rs 2,50,000	Rs 3,75,000	Rs 6,25,000

Less: Taxes 40%	25,000	50,000	1,00,000	1,50,000	2,50,000
PAT	Rs 37,500	Rs 75,000	Rs 1,50,000	Rs 2,25,000	Rs 3,75,000
No. of equity shares	3,12,500	3,12,500	3,12,500	3,12,500	3,12,500
EPS	Rs 0.12	0.24	0.48	0.72	1.20

Plan II: Debt – Equity Mix

EBIT	Rs 62,500	Rs 1,25,000	Rs 2,50,000	Rs 3,75,000	Rs 6,25,000
Less: Interest	1,25,000	1,25,000	1,25,000	1,25,000	1,25,000
EBT	(62,500)	0	1,25,000	2,50,000	5,00,000
Less: Taxes 40%	25,000*	0	50,000	1,00,000	2,00,000
PAT	(37,500)	0	75,000	1,50,000	3,00,000
No. of equity shares	1,56,250	1,56,250	1,56,250	1,56,250	1,56,250
EPS	(Rs0.24)	0	0.48	0.96	1.92

The Company will be able to set off losses against other profits. If the Company has no profits from operations, losses will be carried forward.

PlanIII : Preference Shares – EquityMix

EBIT	Rs 62,500	Rs 1,25,000	Rs 2,50,000	Rs 3,75,000	Rs 6,25,000
Less: Interest	0	0	0	0	0
EBT	62,500	1,25,000	2,50,000	3,75,000	6,25,000
Less: Taxes (40%)	25,000	50,000	1,00,000	1,50,000	2,50,000
PAT	37,500	75,000	1,50,000	2,25,000	3,75,000
Less: Pref. dividend	1,25,000	1,25,000	1,25,000	1,25,000	1,25,000
PAT for ordinary	(87,500)	(50,000)	25,000	1,00,000	2,50,000

shareholders					
No. of Equity shares	1,56,250	1,56,250	1,56,250	1,56,250	1,56,250
EPS	(0.56)	(0.32)	0.16	0.64	1.60

(i) The choice of the financing plan will depend on the state of economic conditions. If the company's sales are increasing, the EPS will be maximum under Plan II: Debt – EquityMix. Under favourable economic conditions, debt financing gives more benefit due to tax shield availability than equity or preferencefinancing.

(iii) EBIT – EPS Indifference Point : Plan I and Plan II

$$\frac{(EBIT^*) \times (1 - T_C)}{N_1} = \frac{(EBIT^* - Interest) \times (1 - T_C)}{N_2}$$

$$\frac{EBIT^* (1 - 0.40)}{3,12,500} = \frac{(EBIT^* - 1,25,000) \times (1 - 0.40)}{1,56,250}$$

$$EBIT^* = \frac{3,12,500}{3,12,500 - 1,56,250} \times 1,25,000$$

$$= ₹\ 2,50,000$$

EBIT – EPS Indifference Point: Plan I and Plan III

$$\frac{EBIT^* (1 - T_c)}{N_1} = \frac{EBIT^* (1 - T_c) - Pref.\ Div.}{N_2}$$

$$EBIT^* = \frac{N_1}{N_1 - N_2} \times \frac{Pref.\ Div.}{1 - T_C}$$

$$= \frac{3,12,500}{3,12,500 - 1,56,250} \times \frac{1,25,000}{1 - 0.4}$$

$$= ₹\ 4,16,666.67$$

Question 39

The management of Z Company Ltd. wants to raise its funds from market to meet out the financial demands of its long-term projects. The company has various combinations of proposalstoraiseitsfunds.Youaregiventhefollowingproposalsofthecompany: (i)

Proposals	% of Equity	% of Debts	% of Preference shares
P	100	-	-
Q	50	50	-

R	50	-	50

(ii) Cost of debt –10%

Cost of preference shares – 10%

(iii) Tax rate –50%

(iv) Equity shares of the face value of Rs10 each will be issued at a premium of Rs10 per share.

(v) Total investment to be raised Rs40,00,000.

(vi) Expected earnings before interest and tax Rs18,00,000.

From the above proposals the management wants to take advice from youfor appropriate plan after computing thefollowing:

- Earnings pershare
- Financialbreak-even-point

Compute the EBIT range among the plans for indifference. Also indicate ifany oftheplansdominate.

Answer

(i) Computation of Earnings per Share(EPS)

Plans	**P**	**Q**	**R**
	Rs	Rs	Rs
Earnings before interest & tax (EBIT)	18,00,000	18,00,000	18,00,000
Less: Interest charges	-	2,00,000	-
Earnings before tax (EBT)	18,00,000	16,00,000	18,00,000
Less : Tax @ 50%	9,00,000	8,00,000	9,00,000
Earnings after tax (EAT)	9,00,000	8,00,000	9,00,000
Less : Preference share dividend	-	-	2,00,000
Earnings available for equity shareholders	9,00,000	8,00,000	7,00,000
No. of shares	2,00,000	1,00,000	1,00,000
E.P.S (Rs)	4.5	8	7

(ii) Computation of Financial Break-evenPoints

Proposal'P' =0

Proposal'Q' = Rs2,00,000 (Interestcharges)

Proposal'R' = Earnings required for payment of preferencesharedividend i.e. Rs2,00,000 0.5 (Tax Rate) = Rs4,00,000

(iii) Computation of Indifference Point between theProposals

The indifference point

$$\frac{(EBIT - 1_1)(1-T)}{E_1} = \frac{(EBIT - 1_2)(1-T)}{E_2}$$

Where,

EBIT = Earnings before interest and tax

1_1 = Fixed Charges (Interest) under Proposal 'P'

1_2 = Fixed charges (Interest) under Proposal 'Q'

T = Tax Rate

E_1 = Number of Equity shares in Proposal P

E_2 = Number of Equity shares in Proposal Q

Combination of Proposals

(a) Indifference point where EBIT of proposal "P" and proposal 'Q' is equal

$$\frac{(EBIT - 0)(1-.5)}{2,00,000} = \frac{(EBIT - 2,00,000)(1-0.5)}{1,00,000}$$

.5 EBIT (1,00,000) = (.5 EBIT -1,00,000) 2,00,000

.5 EBIT = EBIT – 2,00,000

EBIT = ₹ 4,00,000

(b) Indifference point where EBIT of proposal 'P' and Proposal 'R' is equal:

$$\frac{(EBIT - 1)(1-T)}{E_1} = \frac{EBIT - 12)(1-T)}{E_2}$$ - Preference share dividend

$$\frac{(EBIT - 0)(1-.5)}{2,00,000} = \frac{(EBIT - 0)(1-.5) - 2,00,000}{1,00,000}$$

$$\frac{.5EBIT}{2,00,000} = \frac{.5EBIT - 2,00,000}{1,00,000}$$

.25 EBIT = 0.5 EBIT -2,00,000

EBIT = 2,00,000 ÷ 0.25 = ₹ 8,00,000

(c) Indifference point where EBIT of proposal 'Q' and proposal 'R' are equal

$$\frac{(EBIT - 2,00,000)(1-0.5)}{1,00,000} = \frac{(EBIT - 0)(1-0.5) - 2,00,000}{1,00,000}$$

.5 EBIT -1,00,000 = .5 EBIT – 2,00,000

There is no indifference point between proposal 'Q' and proposal 'R'

Analysis: It can be seen that Financial proposal 'Q' dominates proposal 'R', since the financial break-even-point of the former is only ₹ 2,00,000 but in case of latter, it is ₹ 4,00,000.

Question 40 Differentiate between Business risk and Financial risk.

Answer

Business Risk and Financial Risk

Business risk refers to the risk associated with the firm's operations. It is an unavoidable risk because of the environment in which the firm has to operate and the business risk is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses. Revenues and expenses are affected by demand of firm's

products, variations in prices and proportion of fixed cost in total cost.

Whereas, Financial risk refers to the additional risk placed on firm's shareholders as a result of debt use in financing. Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity. Financial risk can be measured by ratios such as firm's financial leverage multiplier, total debt to assets ratio etc.

Question 41

"Operating risk is associated with cost structure, whereas financial risk is associated with capital structure of a business concern." Critically examine this statement.

Answer

"Operating risk is associated with cost structure whereas financial risk is associated with capital structure of a business concern**".**

Operating risk refers to the risk associated with the firm's operations. It is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses, which are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost. If there is no fixed cost, there would be no operating risk. Whereas financial risk refers to the additional risk placed on firm's shareholders as a result of debt and preference shares used in the capital structure of the concern. Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity.

Question 42 From the following financial data of Company A and Company B: Prepare their Income Statements.

	Company A	Company B
	Rs	Rs
Variable Cost	56,000	60% of sales
Fixed Cost	20,000	-
Interest Expenses	12,000	9,000
Financial Leverage	5 : 1	-

Operating Leverage	-	4 : 1
Income Tax Rate	30%	30%
Sales	-	1,05,000

Answer

Income Statements of Company A and Company B

	Company A	Company B
	Rs	Rs
Sales	91,000	1,05,000
Less: Variable cost	56,000	63,000
Contribution	35,000	42,000
Less: Fixed Cost	20,000	31,500
Earnings before interest and tax (EBIT)	15,000	10,500
Less: Interest	12,000	9,000
Earnings before tax (EBT)	3,000	1,500
Less: Tax @ 30%	900	450
Earnings after tax (EAT)	2,100	1,050

Working Notes:

Company A

(i) Financial Leverage = EBIT / EBIT Interest

5 = EBIT / EBIT 12,000

	5 (EBIT – 12,000)	= EBIT
	4 EBIT	= 60,000
	EBIT	= ₹15,000
(ii)	Contribution	= EBIT + Fixed Cost
		= 15,000 + 20,000 = ₹ 35,000
(iii)	Sales	= Contribution + Variable cost
		= 35,000 + 56,000 = ₹ 91,000

Company B

(i)	Contribution	= 40% of Sales (as Variable Cost is 60% of Sales)
		= 40% of 1,05,000 = ₹ 42,000
(ii)	Financial Leverage	$= \frac{\text{Contribution}}{\text{EBIT}}$
	4	$= \frac{42,000}{\text{EBIT}}$
	EBIT	$= \frac{42,000}{4}$ = ₹10,500
(iii)	Fixed Cost	= Contribution – EBIT = 42,000 – 10,500 = ₹ 31,500

Question 43

Distinguish between 'Business Risk' and 'Financial Risk'.

Answer

Business Risk and Financial Risk: Business risk refers to the risk associated with the firm's operations. It is an unavoidable risk because of the environment in which the firm has to operate and the business risk is represented by the variability of earnings before interest and tax (EBIT). The variability in turn is influenced by revenues and expenses. Revenues and expenses are affected by demand of firm's products, variations in prices and proportion of fixed cost in total cost.

Whereas, Financial risk refers to the additional risk placed on firm's shareholders as a result of debt use in financing. Companies that issue more debt instruments would have higher financial risk than companies financed mostly by equity. Financial risk can be measured by ratios such as firm's financial leverage multiplier, total debt to assets ratio etc.

Question 44

What is debt securitisation? Explain the basics of debt securitisation process.

Answer

Debt Securitisation: It is a method of recycling of funds. It is especially beneficial to financial intermediaries to support the lending volumes. Assets generating steady cash flows are packaged together and against this asset pool, market securities can be issued, e.g. housing finance, auto loans, and credit card receivables.

Process of Debt Securitisation

(i) The origination function – A borrower seeks a loan from a finance company, bank, HDFC. The credit worthiness of borrower is evaluated and contract is entered into with repayment schedule structured over the life of the loan.

(ii) The pooling function – Similar loans on receivables are clubbed together to create an underlying pool of assets. The pool is transferred in favour of Special purpose Vehicle (SPV), which acts as a trustee for investors.

(iii) The securitisation function – SPV will structure and issue securities on the basis of asset pool. The securities carry a coupon and expected maturity which can be asset based/mortgage based. These are generally sold to investors through merchant bankers.

Investors are – pension funds, mutual funds, insurance funds.

The process of securitization is generally without recourse i.e. investors bear the credit risk and issuer is under an obligation to pay to investors only if the cash flows are received by him from the collateral. The benefits to the originator are that assets are shifted off the balance sheet, thus giving the originator recourse to off-balance sheet funding.

Question 45

Write short notes on the following:

(a) Global Depository Receipts or Euro Convertible Bonds.

(b) American Depository Receipts (ADRs)

(c) Bridge Finance

(d) Deep Discount Bonds vs. Zero Coupon Bonds

(e) Venture Capital Financing

(f) Seed Capital Assistance

Answer

(a) Global Depository Receipts (GDRs): It is a negotiable certificate denominated in US dollars

which represents a Non-US company's publically traded local currency equity shares. GDRs are created when the local currency shares of an Indian company are delivered to Depository's local custodian Bank against which the Depository bank issues depository receipts in US dollars. The GDRs may be traded freely in the overseas market like any other dollar-expressed security either on a foreign stock exchange or in the over the- counter market or among qualified institutional buyers.

By issue of GDRs Indian companies are able to tap global equity market to raise foreign currency funds by way of equity. It has distinct advantage over debt as there is no repayment of the principal and service costs are lower.

(Or)

Euro Convertible Bond: Euro Convertible bonds are quasi-debt securities (unsecured) which can be converted into depository receipts or local shares. ECBs offer the investor an option to convert the bond into equity at a fixed price after the minimum lock in period. The price of equity shares at the time of conversion will have a premium element. The bonds carry a fixed rate of interest. These are bearer securities and generally the issue of such bonds may carry two options viz. call option and put option. A call option allows the company to force conversion if the market price of the shares exceeds a particular percentage of the conversion price. A put option allows the investors to get his money back before maturity. In the case of ECBs, the payment of interest and the redemption of the bonds will be made by the issuer company in US dollars. ECBs issues are listed at London or Luxemburg stock exchanges.

An issuing company desirous of raising the ECBs is required to obtain prior permission of the Department of Economic Affairs, Ministry of Finance, Government of India, Companieshaving 3 years of good track record will only be permitted to raise funds. The condition is not applicable in the case of projects in infrastructure sector. The proceeds of

ECBs would be permitted only for following purposes:

(i) Import of capital goods

(ii) Retiring foreign currency debts

(iii) Capitalising Indian joint venture abroad

(iv) 25% of total proceedings can be used for working capital and general corporate restructuring.

The impact of such issues has been to procure for the issuing companies' finances at very competitive rates of interest. For the country a higher debt means a forex outgo in terms of interest.

(b) American Depository Receipts (ADRs): These are depository receipts issued by a company in USA and are governed by the provisions of Securities and Exchange Commission of USA. As the regulations are severe, Indian companies tap the American market through private debt placement of GDRs listed in London and Luxemburg stock exchanges. Apart from legal impediments, ADRs are costlier than Global Depository Receipts (GDRs). Legal fees are considerably high for US listing. Registration fee in USA is also substantial. Hence ADRs are less popular than GDRs.

(c) Bridge Finance: Bridge finance refers, normally, to loans taken by the business, usually from commercial banks for a short period, pending disbursement of term loans by financial institutions, normally it takes time for the financial institution to finalise procedures of creation of security, tie-up participation with other institutions etc. even though a positive appraisal of the project has been made. However, once the loans are approved in principle, firms in order not to lose further time in starting their projects arrange for bridge finance. Such temporary loan is normally repaid out of the proceeds of the principal term loans. It is secured by hypothecation of moveable assets, personal guarantees and demand promissory notes. Generally rate of interest on bridge finance is higher as compared with that on term loans.

(d) Deep Discount Bonds vs. Zero Coupon Bonds: Deep Discount Bonds (DDBs) are in the form of zero interest bonds. These bonds are sold at a discounted value and on maturity face value is paid to the investors. In such bonds, there is no interest payoutduring lock-in period.
IDBI was first to issue a Deep Discount Bonds (DDBs) in India in January 1992. The bond of a face value of Rs.1 lakh was sold for Rs2,700 with a maturity period of 25 years. A zero coupon bond (ZCB) does not carry any interest but it is sold by the issuing company at a discount. The difference between discounted value and maturing or face value represents the interest to be earned by the investor on such bonds.

(e) Venture Capital Financing: The term venture capital refers to capital investment made ina business or industrial enterprise, which carries elements of risks and insecurity and the probability of business hazards. Capital investment may assume the form of either equity or debt or both as a derivative instrument. The risk associated with the enterprise could be so high as to entail total loss or be so insignificant as to lead to high gains.

The European Venture Capital Association describes venture capital as risk finance for entrepreneurial growth oriented companies. It is an investment for the medium or long term seeking to maximise the return.

Venture Capital, thus, implies an investment in the form of equity for high-risk projects with the expectation of higher profits. The investments are made through private placement with the expectation of risk of total loss or huge returns. High technology industry is more attractive to venture capital financing due to the high profit potential.

The main object of investing equity is to get high capital profit at saturation stage. In broad sense under venture capital financing venture capitalist makes investment to purchase debt or equity from inexperienced entrepreneurs who undertake highly risky ventures with potential of success.

(f) Seed Capital Assistance: The seed capital assistance has been designed by IDBI for professionally or technically qualified entrepreneurs. All the projects eligible for financial assistance from IDBI, directly or indirectly through refinance are eligible under the scheme. The project cost should not exceed Rs2 crores and the maximum assistance under the project will be restricted to 50% of the required promoters contribution or Rs 15 lacs whichever is lower.

The seed capital Assistance is interest free but carries a security charge of one percentper annum for the first five years and an increasing rate thereafter.

Question 46

Distinguish between Operating lease and financial lease.

Answer

Difference between Financial Lease and Operating Lease

S.No.	Finance Lease	Operating Lease
1.	The risk and reward incident to ownership are passed on the lessee. The lessor only remains the legal owner of the asset.	The lessee is only provided the use of the asset for a certain time. Risk incident to ownership belongs onlyto thelessor.

2	The lesseebears the risk of obsolescence.	The lessee is only allowedthe use ofasset.
3	The lease is non-cancellable by either party under it.	The lease is kept cancellable by the lessor.
4.	The lessor does not bear the cost of repairs, maintenance or operations.	Usually, the lessor bears the cost of repairs, maintenance or operations.
5.	The lease is usually full payout.	The lease is usually non-payout.

Question 47

What is venture capital financing? Discuss the factors that a venture capitalist should consider before financing any risky project.

Answer

Under Venture Capital financing, venture capitalist makes investment to purchase debt or equity from inexperienced entrepreneurs who undertake highly risky ventures with potential of success. The factors to be considered by a Venture Capitalist before financing any Risky Project are:

(i) Quality of the management team is a very important factor to be considered. They arerequired to show a high level of commitment to the project.

(ii) The technical ability of the team is also vital. They should be able to develop and produce a new product / service.

(iii) Technical feasibility of the new product / service should be considered.

(iv) Since the risk involved in investing in the company is quite high, venture capitalists should ensure that the prospects for future profits compensate for the risk.

(v) A research must be carried out to ensure that there is a market for the new product.

(vi) The venture capitalist himself should have the capacity to bear risk or loss, if the project fails.

(vii) The venture capitalist should try to establish a number of exist routes.

(viii) In case of companies, venture capitalist can seek for a place on the Board of Directorsto have a say on all significant matters affecting the business.

(**Note:** Students may answer any two of the above factors.)

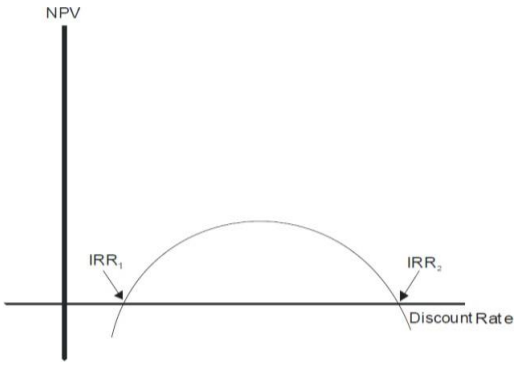
Question 48

Explain the concept of Multiple Internal Rate of Return.

Answer

Multiple Internal Rate of Return (MIRR)

In cases where project cash flows change signs or reverse during the life of a project for example, an initial cash outflow is followed by cash inflows and subsequently followed by a major cash outflow; there may be more than one internal rate of return (IRR). The following graph of discount rate versus net present value (NPV) may be used as an illustration:



In such situations if the cost of capital is less than the two IRRs, a decision can be made easily, however, otherwise the IRR decision rule may turn out to be misleading as the project should only be invested if the cost of capital is between IRR1 and IRR2. To understand the concept of multiple IRRs it is necessary to understand the implicit re- investment assumption in both NPV and IRR techniques.

Question 49

MNP Limited is thinking of replacing its existing machine by a new machine which would cost Rs60 lakhs. The company's current production is Rs80,000 units, and is expected to increase to 1,00,000 units, if the new machine is bought. The selling price of the product would remain unchanged at Rs200 per unit. The following is the cost of producing one unit of product using both the existing and new machine:

			Unit cost (Rs)
	Existing Machine (80,000units)	New Machine (1,00,000units)	Difference
Materials	75.0	63.75	(11.25)
Wages & Salaries	51.25	37.50	(13.75)
Supervision	20.0	25.0	5.0
Repairs and Maintenance	11.25	7.50	(3.75)
Power and Fuel	15.50	14.25	(1.25)
Depreciation	0.25	5.0	4.75
Allocated Corporate Overheads	10.0	12.50	2.50
	183.25	165.50	(17.75)

The existing machine has an accounting book value of Rs1,00,000, and it has been fully depreciated for tax purpose. It is estimated that machine will be useful for 5 years. The supplier of the new machine has offered to accept the old machine for Rs2,50,000. However, the market price of old machine today is Rs1,50,000 and it is

expected to be Rs35,000 after 5 years. The new machine has a life of 5 years and a salvage value of Rs, 2,50,000 at the end of its economic life. Assume corporate Income tax rate at 40%, and depreciation is charged on straight line basis for Income-tax purposes. Further assume that book profit is treated as ordinary income for tax purpose. The opportunity cost of capital of the Company is15%.

Required:

(i) Estimate net present value of the replacement decision.

(ii) Estimate the internal rate of return of the replacement decision.

(iii) Should Company go ahead with the replacement decision? Suggest.

Year (t)	1	2	3	4	5
PVIF0.15,t	0.8696	0.7561	0.6575	0.5718	0.4972
PVIF0.20,t	0.8333	0.6944	0.5787	0.4823	0.4019
PVIF0.25,t	0.80	0.64	0.512	0.4096	0.3277
PVIF0.30,t	0.7692	0.5917	0.4552	0.3501	0.2693
PVIF0.35,t	0.7407	0.5487	0.4064	0.3011	0.2230

Answer

(i) Net Cash Outlay of New Machine

Purchase Price	Rs60,00,000
Less: Exchange value of old machine[2,50,000-0.4(2,50,000-0)]	1,50,000
Rs 58,50,000	

Market Value of Old Machine: The old machine could be sold for Rs1,50,000in the market. Since the exchange value is more than the market value, this option is not attractive. This opportunity will be lost whether the old machine is retained or replaced. Thus, on incremental basis, it has no impact.

Depreciation base: Old machine has been fully depreciated for tax purpose.

Thus the depreciation base of the new machine will be its original cost i.e. Rs60,00,000.

Net Cash Flows: Unit cost includes depreciation and allocated overheads. Allocated overheads are allocations from corporate office therefore they are irrelevant. The depreciation tax shield may be computed separately. Excluding depreciation and allocated overheads, unit costs can be calculated. The company will obtain additional revenue from additional 20,000 unitssold.

Thus, after-tax saving, excluding depreciation, tax shield, would be

$= \{100,000(200 - 148) - 80,000(200 - 173)\} \times (1 - 0.40)$

$= \{52,00,000 - 21,60,000\} \times 0.60$

= Rs18,24,000

After adjusting depreciation tax shield and salvage value, net cash flows and net presentvalue is estimated.

Calculation of Cash flows and Project Profitability

							Rs ('000)
		0	1	2	3	4	5
1	After-tax savings	-	1824	1824	1824	1824	1824
2	Depreciation (Rs 60,00,000 – 2,50,000)/5	-	1150	1150	1150	1150	1150
3	Tax shield on depreciation (Depreciation× Tax rate)	-	460	460	460	460	460
4	Net cash flows	-	2284	2284	2284	2284	2284
	from operations						
	(1+3)						
5	Initial cost	(5850)					
6	Net Salvage	-	-	-	-	-	215
	Value						

	(2,50,000 –						
	35,000)						
7	Net Cash Flows	(5850)	2284	2284	2284	2284	2499
	(4+5+6)						
8	PVF at 15%	1.00	0.8696	0.7561	0.6575	0.5718	0.4972
9	PV	(5850)	1986.166	1726.932	1501.73	1305.99	1242.50
10	NPV	Rs 1913.32					

(ii)

						Rs ('000)
	0	1	2	3	4	5
NCF	(5850)	2284	2284	2284	2284	2499
PVF at 20%	1.00	0.8333	0.6944	0.5787	0.4823	0.4019
PV	(5850)	1903.257	1586.01	1321.751	1101.57	1004.35
PV of benefits	6916.94					
PVF at 30%	1.00	0.7692	0.5917	0.4550	0.3501	0.2693
PV	(5850)	1756.85	1351.44	1039.22	799.63	672.98
PV of benefits	5620.12					

IRR = 20% + 10% ×1066.94 / 1296.82

= 28.23%

(iii) Advise: The Company should go ahead with replacement project, since it is positive NPV decision.

Question 50

A company wants to invest in a machinery that would cost Rs50,000 at the beginning of year 1. It is estimated that the net cash inflows from operations will be Rs18,000 per annum for 3 years, if the company opts to service a part of the machine at the end of year 1 at Rs10,000. In such a case, the scrap value at the end of year 3 will be Rs12,500. However, if the company decides not to service the part, then it will have to be replaced at the end of year 2 at Rs15,400. But in this

case, the machine will work for the 4th year also and get operational cash inflow of Rs18,000 for the 4th year. It will have to be scrapped at the end of year 4 at Rs9,000.

Assuming cost of capital at 10% and ignoring taxes, will you recommend the purchase of this machine based on the net present value of its cash flows?

If the supplier gives a discount of Rs5,000 for purchase, what would be your decision? (The present value factors at the end of years 0, 1, 2, 3, 4, 5 and 6 are respectively 1, 0.9091, 0.8264, 0.7513, 0.6830, 0.6209 and 0.5644).

Answer

Option I : Purchase Machinery and Service Part at the end of Year 1.

Net Present value of cash flow @ 10% per annum discount rate.

$$NPV = -50,000 + \frac{18,000}{(1.1)} + \frac{18,000}{(1.1)^2} + \frac{18,000}{(1.1)^3} - \frac{10,000}{(1.1)} + \frac{12,500}{(1.1)^3}$$

$$= -50,000 + 18,000\ (0.9091 + 0.8264 + 0.7513) - (10,000 \times 0.9091) + (12,500 \times 0.7513)$$

$$= -50,000 + (18,000 \times 2.4868) - 9,091 + 9,391$$

$$= -50,000 + 44,762 - 9,091 + 9,391$$

$$NPV = -4,938$$

Since, Net Present Value is negative; therefore, this option is not to be considered.

If Supplier gives a discount of ₹ 5,000 then,

NPV = +5,000 – 4,938 = + 62

In this case, Net Present Value is positive but very small, therefore, this option may not be advisable.

Option II : Purchase Machinery and Replace Part at the end of Year 2.

$$NPV = -50,000 + \frac{18,000}{(1.1)} + \frac{18,000}{(1.1)^2} + \frac{18,000}{(1.1)^3} - \frac{15,400}{(1.1)^2} + \frac{27,000}{(1.1)^4}$$

$$= -50,000 + 18,000\ (0.9091 + 0.8264 + 0.7513) - (15,400 \times 0.8264) + (27,000 \times 0.6830)$$

$$= -50,000 + 18,000\ (2.4868) - (15,400 \times 0.8264) + (27,000 \times 0.6830)$$

=50,000 + 44,762 – 12,727+ 18,441

=62,727+ 63,203

= +476

Net Present Value is positive, but very low as compared to the investment.

If the Supplier gives a discount of Rs**5,000, then**

NPV = 5,000 + 476 = 5,476

Decision: Option II is worth investing as the net present value is positive and higher as compared to Option I.

Question 51

The management of P Limited is considering selecting a machine out oftwo mutually exclusive machines. The company's cost ofcapital is 12percentand corporate tax rate for thecompanyis30percent.Detailsofthemachinesareasfollows:

	Machine – I	Machine – II
Cost of machine	Rs 10,00,000	Rs 15,00,000
Expected life	5 years	6 years
Annual income before tax and depreciation	Rs 3,45,000	Rs 4,55,000

Depreciation is to be charged on straight linebasis. You are required to:

(i)Calculate the discounted pay-back period, net present value and internal rate of return for each machine.

(ii) Advise the management of P Limited as to which machine they should take up. The present value factors of Re. 1 are as follows:

Year	1	2	3	4	5	6
At 12%	.893	.797	.712	.636	.567	.507
At 13%	.885	.783	.693	.613	.543	.480

At 14%	.877	.769	.675	.592	.519	.456
At 15%	.870	.756	.658	.572	.497	.432
At 16%	.862	.743	.641	.552	.476	.410

Answer

(i) **Computation of Discounted Payback Period, Net Present Value (NPV) and Internal Rate of Return (IRR) for Two Machines**

Calculation of Cash Inflows

	Machine –I (Rs)	**Machine –II (Rs)**
Annual Income before Tax and Depreciation	3,45,000	4,55,000
Less : Depreciation		
Machine – I: 10,00,000 /5	2,00,000	-
Machine – II: 15,00,000 / 6	-	2,50,000
Income before Tax	1,45,000	2,05,000
Less: Tax @ 30 %	43,500	61,500
Income after Tax	1,01,500	1,43,500
Add: Depreciation	2,00,000	2,50,000
Annual Cash Inflows	3,01,500	3,93,500

		Machine – I			**Machine – II**		
Year	P.V. of Re.1 @12%	Cashflow	P.V.	CumulativeP.V	Cashflow	P.V.	Cumulative P.V.
1	0.893	3,01,500	2,69,240	2,69,240	3,93,500	3,51,396	3,51,396
2	0.797	3,01,500	2,40,296	5,09,536	3,93,500	3,13,620	6,65,016
3	0.712	3,01,500	2,14,668	7,24,204	3,93,500	2,80,172	9,45,188
4	0.636	3,01,500	1,91,754	9,15,958	3,93,500	2,50,266	11,95,454

5	0.567	3,01,500	1,70,951	10,86,909	3,93,500	2,23,115	14,18,569
6	0.507	-	-	-	3,93,500	1,99,505	16,18,074

Discounted Payback Period for:

Machine - I

$$\text{Discounted Payback Period} = 4 + \frac{(10,00,000 - 9,15,958)}{1,70,951}$$

$$= 4 + \frac{84,042}{1,70,951}$$

$$= 4 + 0.4916$$

$$= 4.49 \text{ years or 4 years and 5.9 months}$$

Machine - II

$$\text{Discounted Payback Period} = 5 + \frac{(15,00,000 - 14,18,969)}{1,99,505}$$

$$= 5 + \frac{81,431}{1,99,505}$$

$$= 5 + 0.4082$$

$$= 5.41 \text{ years or 5 years and 4.9 months}$$

Net Present Value for:

Machine – I

NPV = ₹ 10,86,909 – 10,00,000 = ₹ 86,909

Machine – II

NPV = ₹ 16,18,074 – 15,00,000 = ₹ 1,18,074

Internal Rate of Return (IRR) for:

Machine – I

$$\text{P.V. Factor} = \frac{\text{Initial Investment}}{\text{Annual Cash Inflow}} = \frac{10,00,000}{3,01,500} = 3.3167$$

PV factor falls between 15% and 16%

Present Value of Cash inflow at 15% and 16% will be:

Present Value at 15% = 3.353 x 3,01,500 = 10,10,930

Present Value at 16% = 3.274 x 3,01,500 = 9,87,111

$$\text{IRR} = 15 + \frac{10,10,930 - 10,00,0000}{10,10,930 - 9,87,111} \times (16 - 15)$$

$$= 15 + \frac{10,930}{23,819} \times 1 = 15.4588\% = 15.46\%$$

Machine - II

$$\text{P.V. Factor} = \frac{15,00,000}{3,93,500} = 3.8119$$

Present Value of Cash inflow at 14% and 15% will be:

Present Value at 14% = 3.888 x 3,93,500 = 15,29,928

Present Value at 15% = 3.785 x 3,93,500 = 14,89,398

$$\text{IRR} = 14 + \frac{15,29,928 - 15,00,000}{15,29,928 - 14,89,398} \times (15 - 14)$$

$$= 14 + \frac{29,928}{40,530} \times 1 = 14.7384\ \% = 14.74\%$$

(ii) Advise to the Management

Ranking of Machines in terms of the Three Methods

	Machine - I	**Machine - II**
Discounted Payback Period	I	II
Net Present Value	II	I
Internal Rate of Return	I	II

Advise: Since Machine - I has better ranking than Machine – II, therefore, Machine – I should be selected.

Question 52

APZ Limited is considering to select a machine between two machines 'A' and 'B'. The two machines have identical capacity, do exactly the same job, but designed differently.

Machine 'A' costs Rs8,00,000, having useful life of three years. It costs Rs1,30,000 per year to run. Machine 'B' is an economy model costing Rs6,00,000, having useful life of two years. It costs Rs2,50,000 per year to run.

The cash flows of machine 'A' and 'B' are real cash flows. The costs are forecasted in rupeesof constant purchasing power. Ignore taxes.

The opportunity cost of capital is10%. The present value factors at 10% are:

Year	t_1	t_2	t_3
PVIF0.10,t	0.9091	0.8264	0.7513
$PVIFA_{0.10,2}$ = 1.7355			
$PVIFA_{0.10,3}$ = 2.4868			

Which machine would you recommend the company to buy?

Answer

Statement Showing Evaluation of Two Machines

Particulars	Machine A	Machine B
Purchase Cost (Rs) : (i)	8,00,000	6,00,000

Life of Machines (in years)	3	2
Running Cost of Machine per year (Rs) : (ii)	1,30,000	2,50,000
Cumulative PVF for 1-3 years @ 10% : (iii)	2.4868	-
Cumulative PVF for 1-2 years @ 10% : (iv)	-	1.7355
Present Value of Running Cost of Machines (Rs):	3,23,284	4,33,875
(v) = [(ii) x (iii)]		
Cash Outflow of Machines (Rs) : (vi) = (i) + (v)	11,23,284	10,33,875
Equivalent Present Value of Annual Cash Outflow	4,51,698.57	5,95,721.69
[(vi) (iii)]	Or 4,51,699	Or 5,95,722

Recommendation: APZ Limited should consider buying Machine A since its equivalent Cash outflow is less than Machine B.

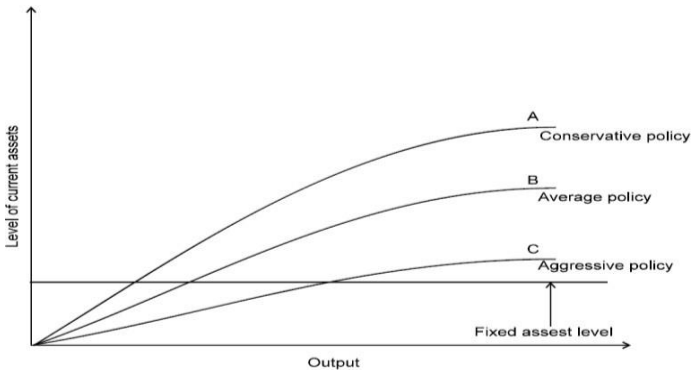
Question 53

Discuss the liquidity vs. profitability issue in management of working capital.

Answer

Liquidity versus Profitability Issue in Management of Working Capital

Working capital management entails the control and monitoring of all components of working capital i.e. cash, marketable securities, debtors, creditors etc. Finance manager has to pay particular attention to the levels of current assets and their financing. To decide the level of financing of current assets, the risk return trade off must be taken into account. The level of current assets can be measured by creating a relationship between current assets and fixed assets. A firm may follow a conservative, aggressive or moderate policy.



A conservative policy means lower return and risk while an aggressive policy produces higher return and risk. The two important aims of the working capital management are profitability and solvency. A liquid firm has less risk of insolvency i.e. it will hardly experiencea cash shortage or a stock out situation. However, there is a cost associated with maintaining a sound liquidity position. So, to have a higher profitability the firm may have tosacrifice solvency and maintain a relatively low level of current assets.

Question 54

A newly formed company has applied to the Commercial Bank for the first time for financing its working capital requirements. The following information is available about the projections for the current year:

	Per unit
Elements of cost:	(Rs)
Raw material	40
Direct labour	15
Overhead	30
Total cost	85
Profit	15
Sales	100

Other information:

Raw material in stock: average 4 weeks consumption, Work – in progress (completion stage, 50 per cent), on an average half a month. Finished goods in stock:on anaverage, one month.

Credit allowed by suppliers is one month. Credit allowed to debtors is two months.

Average time lag in payment of wages is 1½ weeks and 4 weeks in overhead expenses. Cash in hand and at bank is desired to be maintained at Rs50,000.

All Sales are on credit basis only.Required:

(i)Prepare statement showing estimate of working capital needed to finance an activity level of 96,000 units of production. Assume that production is carried on evenly throughout the year, and wages and overhead accrue similarly. For the calculation purpose 4 weeks may be taken as equivalent to a month and 52weeks in a year.

(ii) From the above information calculate the maximum permissible bank finance by all the three methods for working capital as per Tandon Committee norms; assume the core current assets constitute 25% of the current assets.

[Part (ii) is out of syllabus/removed from the syllabus of Financial Management]

Answer

Calculation of Working Capital Requirement

(A) Current Assets

			Rs
(i)	Stock of material for 4 weeks (96,000×40×4/52)		2,95,385
(ii)	Work in progress for ½ month or 2 weeks		
	Material (96,000 40 2/52).50	73,846	
	Labour (96,000 15 2/52).50	27,692	
	Overhead (96,000 30 2/52) .50	55,385	1,56,923
(iii)	Finished stock (96,000 85 4/52)		6,27,692
(iv)	Debtors for 2 months (96,000 85 8/52)		12,55,385
	Cash in hand or at bank		50,000
	Investment in Current Assets		23,85,385

(b) Current Liabilities

(i)	Creditors for one month (96,000 40 4/52) Average		2,95,385
(ii)	lag in payment of expenses Overheads (96,000 30 4/52)	2,21,538	
	Labour (96,000 ? 15 ? 3/104)	41,538	2,63,076
	Current Liabilities		5,58,46118,26,924
	Net working capital (A – B)		

Minimum Permissible Bank Finance as per Tandon CommitteeMethod I: .75 (Current Assets – Current Liabilities)

.75 (23,85,385 – 5,58,461)

.75 (18,26,924)–5,58,461= Rs13,70,193

Method II: .75 Current Assets – Current Liabilities

.75 23,85,385 – 5,58,461

17,89,039–5,58,461 = Rs12,30,578

Method III: .75 (Current Assets – CCA) – Current Liabilities

.75 (23,85,385 – 5,96,346) – 5,58,461

.75 (17,89,039) – 5,58,461

13,41,779–5,58,461 = Rs7,83,318

Question 55

The following figures and ratios are related to a company:

(i) Sales for the year (allcredit)	Rs 30,00,000
(ii) Gross Profitratio	25 percent
(iii) Fixed assets turnover (based on cost of goods sold)	1.5
(iv) Stock turnover (based on cost of goods sold)	6
(v) Liquidratio	1 : 1
(vi) Current ratio	1.5 : 1

(vii) Debtors collection period	2 months
(viii) Reserves and surplus to Share capital	0.6 : 1
(ix) Capital gearing ratio	0.5

(x) Fixed assets to net worth 1.20 :1

You are required to prepare:

(a) Balance Sheet of the company on the basis of above details.

(b) The statement showing working capital requirement, if the company wants tomake a provision for contingencies @ 10 percent of net working capital including such provision.

Answer

(a) Preparation of Balance Sheet of a Company Working Notes:

(i) Cost of Goods Sold=Sales–Gross Profit(=25%ofSales)

= Rs30,00,000 – Rs7,50,000

= Rs22,50,000

(ii) Closing Stock = Cost of Goods Sold / Stock Turnover

= Rs22,50,000/6

= Rs3,75,000

(iii) Fixed Assets = Cost of Goods Sold / Fixed Assets Turnover

= Rs22,50,000/1.5

= Rs15,00,000

(iv) Current Assets : Current Ratio = 1.5 and LiquidRatio = 1 Stock = 1.5 – 1 =0.5

Current Assets = Amount of Stock x 1.5/0.5

= Rs3,75,000 x 1.5/0.5 = Rs11,25,000

(v) Liquid Assets (Debtors and Cash)

= Current Assets – Stock

= Rs11,25,000 – Rs3,75,000

= Rs7,50,000

(vi) Debtors = Sales x Debtors Collection period/12

= Rs30,00,000 x 2 /12

= Rs5,00,000

(vii) Cash = Liquid Assets –Debtors

= Rs7,50,000 – Rs5,00,000 = Rs2,50,000

(viii) Net worth = Fixed Assets/1.2

= Rs15,00,000/1.2 = Rs12,50,000

(ix) Reserves and Surplus

Reserves and Share Capital=0.6+1=1.6

Reserves and Surplus= Rs12,50,000x0.6/1.6

= Rs4,68,750

(x) Share Capital = Net worth – Reserves and Surplus
= Rs12,50,000 – Rs4,68,750

= Rs7,81,250

(xi) Current Liabilities = Current Assets/ Current Ratio

= Rs11,25,000/1.5 = Rs7,50,000

(xii) Long-term Debts Capital Gearing Ratio=Long-term Debts/Equity Shareholders' Fund Long-term Debts =Rs12,50,000x 0.5 = Rs6,25,000

Balance Sheet of a Company

Liabilities	Amount (Rs)	**Assets**	Amount (Rs)
Equity Share Capital	7,81,250	Fixed Assets	15,00,000
Reserves and Surplus	4,68,750	Current Assets	
Long-term Debts	6,25,000	Stock	3,75,000
Current Liabilities	7,50,000	Debtors	5,00,000
		Cash	2,50,000
	26,25,000		26,25,000

(b) Statement Showing Working Capital Requirement

A.	**Current Assets**		
	Stock	3,75,000	
	Debtors	5,00,000	
	Cash	2,50,000	11,25,000
B.	**Current Liabilities**		7,50,000
	Working Capital before Provision (A – B)		3,75,000
Add:	Provision for Contingencies @ 10% of Working		
	Capital including Provision i.e. 1/9thof Working		
	Capital before Provision : 3,75,000 x 1/9		41,667
	Working Capital Requirement including		4,16,667

	Provision		

Question 56

Explain briefly the functions of Treasury Department.

Answer

The functions of treasury department management is to ensure proper usage, storage and risk management of liquid funds so as to ensure that the organization is able to meet its obligations, collect its receivables and also maximize the return on its investments. Towards this end the treasury function may be divided into the following:

(i) **Cash Management:** The efficient collection and payment of cash both inside the organization and to third parties is the function of treasury department. Treasury normally manages surplus funds in an investment portfolio.

(ii) **Currency Management:** The treasury department manages the foreign currency risk exposure of the company. It advises on the currency to be used when invoicing overseas sales. It also manages any net exchange exposures in accordance with the company policy.

(iii) **Fund Management:** Treasury department is responsible for planning and sourcing the company's short, medium and long-term cash needs. It also participates in the decision on capital structure and forecasts future interest and foreign currency rates.

(iv) **Banking:** Since short-term finance can come in the form of bank loans or through the sale of commercial paper in the money market, therefore, treasury department carries out negotiations with bankers and acts as the initial point of contact with them.

(v) **Corporate Finance:** Treasury department is involved with both acquisition and disinvestment activities within the group. In addition, it is often responsible for investor relations.

Question 57

'Management of marketable securities is an integral part of investment of cash.' Comment.

Answer

"**Management of Marketable Securities is an Integral Part of Investment of Cash"**

Management of marketable securities is an integral part of investment of cash as it serves both the purposes of liquidity and cash, provided choice of investment is made correctly. As the working capital needs are fluctuating, it is possible to invest excess funds in some short term securities, which can be liquidated when need for cash is felt. The selection of securities should be guided by three principles namely safety, maturity and marketability.

Question 58

The following details are forecasted by a company for the purpose of effective utilizationand management of cash:

(i) Estimated sales and manufacturing costs:

Year and month 2010	Sales Rs	Materials Rs	Wages Rs	Overheads Rs
April	4,20,000	2,00,000	1,60,000	45,000
May	4,50,000	2,10,000	1,60,000	40,000
June	5,00,000	2,60,000	1,65,000	38,000
July	4,90,000	2,82,000	1,65,000	37,500
August	5,40,000	2,80,000	1,65,000	60,800
September	6,10,000	3,10,000	1,70,000	52,000

(i)Credit terms:

- Sales – 20 percent sales are on cash, 50 percent of the credit sales are collected next month and the balance in the following month.

- Credit allowed by suppliers is 2months.

- Delay in payment of wages is ½ (one-half) month and of overheads is 1(one) month.

(ii) Interest on 12 percent debentures of Rs5,00,000 is to be paid half-yearly in June and December.

(iii) Dividends on investments amounting to Rs25,000 are expected to be received in June, 2010.

(iv) A new machinery will be installed in June, 2010 at a cost of Rs4,00,000 which is payable in 20 monthly installments from July, 2010 onwards.

(v) Advance income-tax, to be paid in August, 2010, is Rs15,000.

(vi) Cash balance on 1st June, 2010 is expected to be Rs45,000 and the company wants to keep it at the end of every month around this figure. The excess cash (in multiple of thousand rupees) is being put in fixed deposit.

You are required to prepare monthly Cash budget on the basis of above information for four months beginning from June,2010.

Answer

Preparation of Monthly Cash Budget

Cash Budget for four months from June, 2010 to September, 2010

Particulars	June (Rs)	July (Rs)	August (Rs)	September (Rs)
Opening Balance	45,000	45,500	45,500	45,000
Receipts:				
Cash Sales	1,00,000	98,000	1,08,000	1,22,000
Collection from debtors	3,48,000	3,80,000	3,96,000	4,12,000
Dividends	25,000	-	-	-

Total (A)	5,18,000	5,23,500	5,49,500	5,79,000
Payments:				
Creditors for Materials	2,00,000	2,10,000	2,60,000	2,82,000
Wages	1,62,500	1,65,000	1,65,000	1,67,500
Overheads	40,000	38,000	37,500	60,800
Instalment for Machine	-	20,000	20,000	20,000
Interest on Debentures	30,000	-	-	-
Advance Tax	-	-	15,000	-
Total (B)	4,32,500	4,33,000	4,97,500	5,30,300
Surplus (A – B)	85,500	90,500	52,000	48,700
Fixed Deposits	40,000	45,000	7,000	3,000
Closing Balance	45,500	45,500	45,000	45,700

Working notes:

(1) Cash Sales and Collection fromDebtors:

	TotalSales	CashSales	Credit	Collection from Debtors

Month	(Rs)	(Rs)	Sales (Rs)	June (Rs)	July (Rs)	Aug.(Rs)	Sept.(Rs)
April, 2010	4,20,000	84,000	3,36,000	1,68,000	-	-	-
May, 2010	4,50,000	90,000	3,60,000	1,80,000	1,80,000	-	-
June, 2010	5,00,000	1,00,000	4,00,000	-	2,00,000	2,00,000	-
July, 2010	4,90,000	98,000	3,92,000	-	-	1,96,000	1,96,000
Aug., 2010	5,40,000	1,08,000	4,32,000	-	-	-	2,16,000
Sept., 2010	6,10,000	1,22,000	4,88,000	-	-	-	-
			Total	3,48,000	3,80,000	3,96,000	4,12,000

(1) Payment ofWages

June = 80,000 + 82,500 = 1,62,500;

July = 82,500 + 82,500 = 1,65,000;

Aug. = 82,500 + 82,500 = 1,65,000; and

Sept.= 82,500 + 85,000 = 1,67,500.

(**Note:** It has been assumed that the company wants to keep minimum cashbalance of Rs 45,000.)

Question 59

What are the forms of bank credit?

Answer

Forms of Bank Credit

Some of the forms of bank credit are:

(i) Short Term Loans: In a loan account, the entire advance is disbursed at one time either in cash or by transfer to the current account of the borrower. It is a single advance and given against securities like shares, government securities, life insurance policies and fixed deposit

receipts, etc.

(ii) Overdraft: Under this facility, customers are allowed to withdraw in excess of credit balance standing in their Current Account. A fixed limit is therefore granted to the borrower within which the borrower is allowed to overdraw his account.

(iii) Clean Overdrafts: Request for clean advances are entertained only from parties which are financially sound and reputed for their integrity. The bank has to rely upon the personal security of the borrowers.

(iv) Cash Credits: Cash Credit is an arrangement under which a customer is allowed an advance up to certain limit against credit granted by bank. Interestis not charged on the full amount of the advance but on the amount actually availed of by him.

(v) Advances against goods: Goods are charged to the bank either by way of pledge or by way of hypothecation. Goods include all forms of movables which are offered to the bank as security.

(vi) Bills Purchased/Discounted: These advances are allowed against the security of bills which may be clean or documentary.

Usance bills maturing at a future date or sight are discounted by the banks for approved parties. The borrower is paid the present worth and the bank collects the full amount on maturity.

(vii) Advance against documents of title to goods: A document becomes a document of title to goods when its possession is recognised by law or business custom as possession of the goods like bill of lading, dock warehouse keeper's certificate, railway receipt, etc. An advance against the pledge of such documents is an advance against the pledge of goods them selves.

(viii) Advance against supply of bills: Advances against bills for supply of goods to government or semi-government departments against firm orders after acceptance of tenderfall under this category. It is this debt that is assigned to the bank by endorsement of supply bills and executing irrevocable power of attorney in favour of the banks for receiving the amount of supply bills from the Government departments.

(**Note**: Students may answer any four of the above forms of bank credit.)

Question 60

State the different types of Packing Credit.

Answer

Different Types of Packing Credit

Packing credit may be of the following types:

(i) Clean Packing credit: This is an advance made available to an exporter only on production of a firm export order or a letter of credit without exercising any charge or control over raw material or finished goods. It is a clean type of export advance. Each proposal is weighted according to particular requirements of the trade and creditworthiness of the exporter. A suitable margin has to be maintained. Also, Export Credit Guarantee Corporation (ECGC) cover should be obtained by the bank.

(ii) Packing credit against hypothecation of goods: Export finance is made available on certain terms and conditions where the exporter has pledgeable interest and the goods are hypothecated to the bank as security with stipulated margin. At the time of utilising the advance, the exporter is required to submit alongwith the firm export order or letter of credit, relative stock statements and thereafter continue submitting them every fortnight and whenever there is any movement in stocks.

(iii) Packing credit against pledge of goods: Export finance is made available on certain terms and conditions where the exportable finished goods are pledged to the banks with approved clearing agents who will ship the same from time to time as required by the exporter. The possession of the goods so pledged lies with the bank and is kept under its lock and key.

(iv) E.C.G.C. guarantee: Any loan given to an exporter for the manufacture, processing, purchasing, or packing of goods meant for export against a firm order qualifies for the packing credit guarantee issued by Export Credit Guarantee Corporation.

(v) Forward exchange contract: Another requirement of packing credit facility is that if the export bill is to be drawn in a foreign currency, the exporter should enter into a forward exchange contact with the bank, thereby avoiding risk involved in a possible change in the rate of exchange.

(Note: Students may answer any four of the above packing credits).

Q 61: Profit maximization does not consider risk or uncertainty, whereas wealth maximization considers both risk and uncertainty. Suppose there are two products, X and Y, and their projected earnings over the next 5 years are as shown below:

Year	Product X (₹)	Product Y (₹)
1	10,000	11,000
2	10,000	11,000
3	10,000	11,000
4	10,000	11,000
5	10,000	11,000
	50,000	55,000

Ans: A profit maximization approach would favour product Y over product X. However, if product Y is more risky than product X, then the decision is not as straightforward as the figures seem to indicate. It is important to realize that a trade-off exists between risk and return. Stockholders expect greater returns from investments of higher risk and vice-versa. To choose product Y, stockholders would demand a sufficiently large return to compensate for the comparatively greater level of risk.

Q 62: Point out the difference between Financial Management & Financial Accounting?

Ans: Financial Management and Accounting: The relationship between financial management and accounting are closely related to the extent that accounting is an important input in financial decision making. In other words, accounting is a necessary input into the financial management function. Financial accounting generates information relating to operations of the organisation. The outcome of accounting is the financial statements such as balance sheet, income statement, and the statement of changes in financial position. The information contained in these statements and reports helps the financial managers in gauging the past performance and future directions of the organisation. Though financial management and

accounting are closely related, still they differ in the treatment of funds and also with regards to decision making. Some of the differences are:-

Treatment of Funds: In accounting, the measurement of funds is based on the accrual principle i.e. revenue is recognized at the point of sale and not when collected and expenses are recognised when they are incurred rather than when actually paid. The accrual based accounting data do not reflect fully the financial conditions of the organisation. An organisation which has earned profit (sales less expenses) may said to be profitable in the accounting sense but it may not be able to meet its current obligations due to shortage of liquidity as a result of say, uncollectible receivables. Such an organisation will not survive regardless of its levels of profits. Whereas, the treatment of funds in financial management is based on cash flows. The revenues are recognized only when cash is actually received (i.e. cash inflow) and expenses are recognised on actual payment (i.e. cash outflow). This is so because the finance manager is concerned with maintaining solvency of the organisation by providing the cash flows necessary to satisfy its obligations and acquiring and financing the assets needed to achieve the goals of the organisation. Thus, cash flow based returns help financial managers to avoid insolvency and achieve desired financial goals.

Decision – making: The purpose of accounting is to collect and present financial data of the past, present and future operations of the organization. The financial manager uses these data for financial decision making. It is not that the financial managers cannot collect data or accountants cannot make decisions, but the chief focus of an accountant is to collect data and present the data while the financial manager's primary responsibility relates to financial planning, controlling and decision making. Thus, in a way it can be stated that financial management begins where accounting ends.

Q 63: "Financial management is concerned with acquisition & financing of short term & long-term credit". ELABORATE.

Ans: For the purpose of starting any new business/venture, an entrepreneur goes through the following stages of decision making:-

Stage 1	Stage 2	Stage 3	Stage 4
Decide which assets (premises, machinery, equipment etc.) to buy.	Determining what is total investment (since assets cost money) required for buying assets.	Apart from buying assets the entrepreneur would also need to determine how much cash he would need to run the daily operations (payment for raw material, salaries, wages etc.). In other words this is also defined as Working Capital requirement.	The next stage is to decide what all sources, does the entrepreneur need to tap to finance the total investment (assets and working capital). The sources could be Share Capital (Including Entrepreneur's own funds) or Borrowing from Banks or Investment from Financial Institutions etc.

While deciding how much to take from each source, the entrepreneur would keep in mind the cost of capital for each source (Interest/Dividend etc.). As an entrepreneur he would like to keep the cost of capital low. Thus, financial management is concerned with efficient acquisition (financing) and allocation (investment in assets, working capital etc.) of funds with an objective to make profit (dividend) for owners. In other words, focus of financial management is to address three major financial decision areas namely, investment, financing and dividend decisions.

Any business enterprise requiring money and the 3 key questions being enquired into

1. Where to get the money from? (Financing Decision)
2. Where to invest the money? (Investment Decision)
3. How much to distribute amongst shareholders to keep them satisfied? (Dividend Decision)

Q 64: DISCUSS three main considerations in procuring funds?

Ans: Since funds can be obtained from different sources therefore their procurement is always considered as a complex problem by business concerns.

In a global competitive scenario it is not enough to depend on the available ways of raising finance but resource mobilization has to be undertaken through innovative ways on financial products which may meet the needs of investors. We are constantly seeing new and creative sources of funds which are helping the modern businesses to grow faster. For example trading in Carbon Credits is turning out to be another source of funding.

Funds procured from different sources have different characteristics in terms of risk, cost and

control. The cost of funds should be at the minimum level for that a proper balancing of risk and control factors must be carried out. Another key consideration in choosing the source of new business finance is to strike a balance between equity and debt to ensure the funding structure suits the business. Let us discuss some of the sources of funds:

(a) Equity: The funds raised by the issue of equity shares are the best from the risk point of view for the firm, since there is no question of repayment of equity capital except when the firm is under liquidation. From the cost point of view, however, equity capital is usually the most expensive source of funds. This is because the dividend expectations of shareholders are normally higher than prevalent interest rate and also because dividends are an appropriation of profit, not allowed as an expense under the Income Tax Act. Also the issue of new shares to public may dilute the control of the existing shareholders.

(b) Debentures: Debentures as a source of funds are comparatively cheaper than the shares because of their tax advantage. The interest the company pays on a debenture is free of tax, unlike a dividend payment which is made from the taxed profits. However, even when times are hard, interest on debenture loans must be paid whereas dividends need not be. However, debentures entail a high degree of risk since they have to be repaid as per the terms of agreement. Also, the interest payment has to be made whether or not the company makes profits.

(c) Funding from Banks: Commercial Banks play an important role in funding of the business enterprises. Apart from supporting businesses in their routine activities (deposits, payments etc.) they play an important role in meeting the long term and short term needs of a business enterprise. Different lending services provided by Commercial Banks are depicted as follows:-

(d) International Funding: Funding today is not limited to domestic market. With liberalization and globalization a business enterprise has options to raise capital from International markets also. Foreign Direct Investment (FDI) and Foreign Institutional Investors (FII) are two major routes for raising funds from foreign sources besides ADR's (American depository receipts) and GDR's (Global depository receipts). Obviously, the mechanism of procurement of funds has to be modified in the light of the requirements of foreign investors.

Q 65: EXPLAIN "Wealth maximisation" and "Profit maximisation" objectives of financial management

Ans: Profit Maximization It has traditionally been argued that the primary objective of a company is to earn profit; hence the objective of financial management is also profit maximisation. This implies that the finance manager has to make his decisions in a manner so that the profits of the concern are maximised. Each alternative, therefore, is to be seen as to whether or not it gives maximum profit. However, profit maximization cannot be the sole objective of a company. It is at best a limited objective. If profit is given undue importance, a number of problems can arise. Some of these have been discussed below: (i) he term profit is vague. It does not clarify what exactly it means. It conveys a different meaning to different people. For example, profit may be in short term or long term period; it may be total profit or rate of profit etc. (ii) Profit maximisation has to be attempted with a realisation of risks involved. There is a direct relationship between risk and profit. Many risky propositions yield high profit. Higher the risk, higher is the possibility of profits. If profit maximisation is the only goal, then risk factor is altogether ignored. This implies that finance manager will accept highly risky proposals also, if they give high profits. In practice, however, risk is very important consideration and has to be balanced with the profit objective. (iii) Profit maximisation as an objective does not take into account the time pattern of returns. Proposal A may give a higher amount of profits as compared to proposal B, yet if the returns of proposal A begin to flow say 10 years later, proposal B may be preferred which may have lower overall profit but the returns flow is more early and quick.

(iv)Profit maximisation as an objective is too narrow. It fails to take into account the social considerations as also the obligations to various interests of workers, consumers, society, as well as ethical trade practices. If these factors are ignored, a company cannot survive for long. Profit maximization at the cost of social and moral obligations is a short sighted policy.

Wealth / Value Maximisation

Finance manager should emphasis on Cash flow for investment or financing decisions not on Accounting profit. The shareholder value maximization model holds that the primary goal of the firm is to maximize its market value and implies that business decisions should seek to increase the net present value of the economic profits of the firm. So for measuring and maximising shareholders wealth finance manager should follow:

- ♦ Cash Flow approach not Accounting Profit
- ♦ Cost benefit analysis

♦ Application of time value of money.

How do we measure the value/wealth of a firm?

According to Van Horne, "Value of a firm is represented by the market price of the company's common stock.

The market price of a firm's stock represents the focal judgment of all market participants as to what the value of the particular firm is. It takes into account present and prospective future earnings per share, the timing and risk of these earnings, the dividend policy of the firm and many other factors that bear upon the market price of the stock. The market price serves as a performance index or report card of the firm's progress. It indicates how well management is doing on behalf of stockholders."

$$\text{Value of a firm } (V) = \text{Number of Shares } (N) \times \text{Market price of shares } (MP)$$

Or

$$V = \text{Value of equity } (V_e) + \text{Value of debt } (V_d)$$

Q 66: DISCUSS the role of a chief financial officer.

Ans: His responsibilities include:

(a) Financial analysis and planning: Determining the proper amount of funds to employ in the firm, i.e. designating the size of the firm and its rate of growth.

(b) Investment decisions: The efficient allocation of funds to specific assets.

(c) Financing and capital structure decisions: Raising funds on favourable terms as possible i.e. determining the composition of liabilities.

(d) Management of financial resources (such as working capital).

(e) Risk management: Protecting assets.

What a CFO used to do?	What a CFO now does?
Budgeting	Budgeting
Forecasting	Forecasting
Accounting	Managing M&As
Treasury (cash management)	Profitability analysis (for example, by customer or product)

Preparing internal financial reports for management.	Pricing analysis
Preparing quarterly, annual filings for investors.	Decisions about outsourcing
Tax filing	Overseeing the IT function.
Tracking accounts payable and accounts receivable.	Overseeing the HR function.
Travel and entertainment expense management.	Strategic planning (sometimes overseeing this function).
	Regulatory compliance.
	Risk management

Q 67: In recent years, there have been a number of environmental, pollution and other regulations imposed on businesses. In view of these changes, is maximization of shareholder wealth still a realistic objective?

Ans: Every entity associated with the company will evaluate the performance of the management from the fulfilment of its own objective. The survival of the management will be threatened if the objective of any of the entities remains unfulfilled.

The wealth maximization objective is generally in accord with the interests of the various groups such as owners, employees, creditors and society, and thus, it may be consistent with the management objective of survival.

Owing to limitation (timing, social consideration etc.) in profit maximization, in today's real world situations which is uncertain and multi-period in nature, wealth maximization is a better objective. Where the time period is short and degree of uncertainty is not great, wealth maximization and profit maximization amount to\ essentially the same. The table below highlights some of the advantages and disadvantages of both profit maximization and wealth maximization goals:-

Goal	Objective	Advantages	Disadvantages
Profit Maximization	Large amount of profits	(i) Easy to calculate profits (ii) Easy to determine the link between financial decisions and profits.	(i) Emphasizes the short term gains (ii) Ignores risk or uncertainty (iii) Ignores the timing of returns (iv) Requires immediate resources.
Shareholders Wealth Maximisation	Highest market value of shares.	(i) Emphasizes the long term gains (ii) Recognises risk or uncertainty (iii) Recognises the timing of returns (iv) Considers shareholders' return.	(i) Offers no clear relationship between financial decisions and share price. (ii) Can lead to management anxiety and frustration.

Example: Profit maximization can be achieved in the short term at the expense of the long term goal, that is, wealth maximization. For example, a costly investment may experience losses in the short term but yield substantial profits in the long term. Also, a firm that wants to show a short term profit may, for example, postpone major repairs or replacement, although such postponement is likely to hurt its long term profitability.

Following illustration can be taken to understand why wealth maximization is a preferred objective than profit maximization.

Q 68: SG Ltd. is considering a project "Z" with an initial outlay of ₹ 7,50,000 and life of 5 years. The estimates of project are as follows:

	Lower Estimates	Base	Upper Estimates
Sales (units)	4,500	5,000	5,500
	(₹)	(₹)	(₹)
Selling Price p.u.	175	200	225
Variable cost p.u.	100	125	150
Fixed Cost	50,000	75,000	1,00,000

Depreciation included in Fixed cost is ₹ 35,000 and corporate tax is 25%. Assuming the cost of capital as 15%, DETERMINE NPV in three scenarios i.e worst, base and best case scenario.

PV factor for 5 years at 15% are as follows:

Years	1	2	3	4	5
P.V factor	0.870	0.756	0.658	0.572	0.497

Ans: (i) Calculation of Yearly Cash Inflow

In worst case: High costs and Low price (Selling price) and volume(Sales units) are taken.

In best case: Low costs and High price(Selling price) and volume(Sales units) are taken.

	Worst Case	Base	Best Case
Sales (units) (A)	4,500	5,000	5,500
	(₹)	(₹)	(₹)
Selling Price p.u.	175	200	225
Less: Variable cost p.u.	150	125	100
Contribution p.u. (B)	25	75	125
Total Contribution (A x B)	1,12,500	3,75,000	6,87,500
Less: Fixed Cost	1,00,000	75,000	50,000
EBT	12,500	3,00,000	6,37,500
Less: Tax @ 25%	3,125	75,000	1,59,375
EAT	9,375	2,25,000	4,78,125
Add: Depreciation	35,000	35,000	35,000
Cash Inflow	44,375	2,60,000	5,13,125

(ii) Calculation of NPV in different scenarios

	Worst Case	Base	Best Case
Initial outlay (A) (₹)	7,50,000	7,50,000	7,50,000
Cash Inflow (c) (₹)	44,375	2,60,000	5,13,125
Cumulative PVF @ 15% (d)	3.353	3.353	3.353
PV of Cash Inflow (B = c x d) (₹)	1,48,789.38	8,71,780	17,20,508.13
NPV (B - A) (₹)	(6,01,210.62)	1,21,780	9,70,508.13

Q 69: AB Engineering Ltd. belongs to a risk class for which the capitalization rate is 10%. It currently has outstanding 10,000 shares selling at ₹ 100 each. The firm is contemplating the declaration of a dividend of ₹ 5/ share at the end of the current financial year. It expects to have a net income of ₹ 1,00,000 and has a proposal for making new investments of ₹ 2,00,000. CALCULATE the value of the firms when dividends (i) are not paid (ii) are paid

Ans: CASE 1: Value of the firm when dividends are not paid.

Step 1: Calculate price at the end of the period

K_e = 10% P_0= 100, D_1= 0

$P_0 = \frac{P_{1+D_1}}{1+ K_e}$

100 = $\frac{P_{1+0}}{1+0.10}$ P_1 = 110

Step 2: Calculation of funds required for investment

Earning	₹ 1,00,000
Dividend distributed	Nil
Fund available for investment	₹ 1,00,000
Total Investment	₹ 2,00,000
Balance Funds required	₹ 2,00,000 - ₹1,00,000 = ₹1,00,000

Step 3: No. of shares required to be issued for balance fund

No. of shares = $\frac{\textbf{Funds required}}{\textbf{Price at end } (P_1)}$

$\Delta n = \frac{\mathbf{1,00,000}}{\mathbf{110}}$

Step 4: Calculation of value of firm

nP0 = $\frac{(n+\Delta n)P_{1-E}}{1+K_e}$

nP0 = $\frac{\left(10{,}000+\frac{Rs.1{,}00{,}000}{Rs.110}\right)\times Rs.110-Rs.\ 200{,}000+Rs.\ 1{,}00{,}000}{(1+0.10)}$

CASE 2: Value of the firm when dividends are paid.

Step 1: Calculate price at the end of the period

K_e = 10% P_0= 100, D_1= 5

P_0 = $\frac{P_{1+D_1}}{1+K_e}$

100 = $\frac{P_{1+0}}{1+0.10}$ P_1 = 105

Step 2: Calculation of funds required for investment

Earning	₹ 1,00,000
Dividend distributed	Rs. 50,000
Fund available for investment	₹ 50,000
Total Investment	₹ 2,00,000
Balance Funds required	₹ 2,00,000 - ₹ 50,000 = ₹1,50,000

Step 3: No. of shares required to be issued for balance fund

No. of shares = $\frac{\textbf{\textit{Funds required}}}{\textbf{\textit{Price at end}}\ (P_1)}$

Δn = $\frac{\textbf{\textit{Rs.}}\mathbf{1{,}50{,}000}}{\textbf{\textit{Rs.}}\ \mathbf{105}}$

Step 4: Calculation of value of firm

nP0 = $\frac{(n+\Delta n)P_{1-I+E}}{1+K_e}$

$$\frac{\left(10{,}000+\frac{Rs.1{,}50{,}000}{Rs.105}\right)\times Rs.105-Rs.\ 200{,}000+Rs.\ 1{,}00{,}000}{(1+0.10)}$$

Thus, it can be seen from the example that the value of the firm remains the same in either case.

Q 70: Given the last year's dividend is ₹ 9.80, speed of adjustment = 45%, target payout ratio 60% and EPS for current year ₹ 20. COMPUTE current year's dividend using Linter's model.

Ans: $D_1 = D_o + [(EPS \times Target\ payout) - D_o] \times Af$

$D_1 = 9.80 + [(20 \times 60\%) - 9.80] \times 0.45$

$D_1 = 9.80 + 0.99 = ₹10.79$

Q 71: The following information pertains to M/s XY Ltd.

Earnings of the Company	₹ 5,00,000
Dividend Payout ratio	60%
No. of shares outstanding	1,00,000
Equity capitalization rate	12%
Rate of return on investment	15%

(i) What would be the market value per share as per Walter's model?

(ii) What is the optimum dividend payout ratio according to Walter's model and the market value of

Company's share at that payout ratio?

Ans: (i) Walter's model is given by

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

Where

P = Market Price per share

E = Earnings per share = Rs. 5

D = Dividend per share = Rs. 3

R = Return on investment = 15%

K_e = Cost of equity capital = 12%

$$P = \frac{3 + \frac{0.15}{0.12}(5-3)}{0.12} = \text{RS. } 45.83$$

(ii) According to Waler's model when the return on investment is more than the cost of equity capital, the price per share increases as the dividend pay-out ratio in this case is nil.

So, at pay-out ratio of zero, the market value of company's share will be:

$$P = \frac{0 + \frac{0.15}{0.12}(5-0)}{0.12} = \text{Rs. } 52.08$$

Q 72: Discuss the practical considerations in dividend policy

Ans: The formulation of dividend policy depends upon answers to the following questions:

• whether there should be a stable pattern of dividends over the years or

• whether the company should treat each dividend decision completely independent. The practical considerations in dividend policy of a company are briefly discussed below:

(a) Financial Needs of a Company: Retained earnings can be a source of finance for creating profitable investment opportunities. As we discussed earlier, when internal rate of return of a company is greater than return required by shareholders, it would be advantageous for the shareholders to re-invest their earnings.

Risk and financial obligations increase if a company raises capital through issue of new shares where floatation costs are involved.

(b) Constraints on Paying Dividends

(i) Legal: Please see point no. (9) under the heading, "Determinants of Dividend Decisions".

(ii) Liquidity: Payment of dividends means outflow of cash. Ability to pay dividends depends on cash and liquidity position of the firm. A mature company does not have much investment opportunities, nor its funds tied up in permanent working capital and, therefore has a sound cash position. A growth oriented company in spite of having good profits need funds to expand its operations and permanent working capital and therefore it is less likely to declare dividends.

(iii) Access to the Capital Market: By paying large dividends, cash position is affected. So, if new shares have to be issued to raise funds for financing investment programmes and if the existing shareholders cannot buy additional shares, their control is diluted. In such a situation, payment of dividends may be withheld and earnings are utilised for financing firm's investment opportunities.

(iv)Investment Opportunities: If investment opportunities are inadequate, it is better to pay dividends and raise external funds whenever necessary for such opportunities.

(c) Desire of Shareholders: The desire of shareholders (whether they prefer regular income by way of dividend or maximize their wealth by way of gaining on sale of the shares) is also an important point to be considered by the companies. The small shareholders are concerned with regular dividend income, hence, some select group of companies paying regular and liberal dividend.

As compared to those shareholders who prefer regular dividend as source of income, there are

shareholders who prefer to gain on sale of shares at times when shares command higher price in the market. However, capital gain on sale of shares attracts tax on such gain and rates vary on the basis of holding period.

The dividend policy, thus pursued by the company should strike a balance on the desires of the shareholders.

Also, the dividend policy once established should be continued as long as possible without interfering with the needs of the company to create a positive clientele effect.

(d) Stability of Dividends: Stability in dividend can be maintained by fixing the amount or rate of dividend irrespective of the earnings of the company.

Q 73: LIST out the assumptions of irrelevance theory.

Ans: Assumptions of M.M Hypothesis

MM hypothesis is based on the following assumptions:

• Perfect capital markets: The firm operates in a market in which all investors are rational and information is freely available to all.

• No taxes or no tax discrimination between dividend income and capital appreciation (capital gain). It means there is no difference in taxation of dividend income or capital gain. This assumption is necessary for the universal applicability of the theory, since, the tax rates may be different in different countries.

• Fixed investment policy: It is necessary to assume that all investment should be financed through equity only, since implication after using debt as a source of finance may be difficult to understand. Further, the impact will be different in different cases.

• No floatation or transaction cost: Similarly, these costs may differ from country to country or market to market.

• Risk of uncertainty does not exist. Investors are able to forecast future prices and dividend with certainty and one discount rate is appropriate for all securities and all time periods.

Q 74: A firm has the following data for the year ending 31st March, 2020:

Sales (1,00,000 @ ₹ 20)	20,00,000
Earnings before Interest and Taxes	2,00,000

Fixed Assets	5,00,000

The three possible current assets holdings of the firm are ₹ 5,00,000, ₹ 4,00,000 and ₹ 3,00,000. It is assumed that fixed assets level is constant and profits do not vary with current assets levels. ANALYSE the effect of the three alternative current assets policies.

Ans: Effect of Alternative Working Capital Policies

Working Capital Policy	Conservative (₹)	Moderate (₹)	Aggressive (₹)
Sales	20,00,000	20,00,000	20,00,000
Earnings before Interest and Taxes (EBIT)	2,00,000	2,00,000	2,00,000
Current Assets	5,00,000	4,00,000	3,00,000
Fixed Assets	5,00,000	5,00,000	5,00,000
Total Assets	10,00,000	9,00,000	8,00,000
Return on Total Assets (EBIT÷ Total Assets)	20%	22.22%	25%
Current Assets/Fixed Assets	1.00	0.80	0.60

The aforesaid calculation shows that the conservative policy provides greater liquidity (solvency) to the firm, but lower return on total assets. On the other hand, the aggressive policy gives higher return, but low liquidity and thus is very risky. The moderate policy generates return higher than Conservative policy but lower than aggressive policy. This is less risky than aggressive policy but riskier than conservative policy.

In determining the optimum level of current assets, the firm should balance the profitability – solvency tangle by minimizing total costs – Cost of liquidity and cost of illiquidity.

Q 75: The following information is available in respect of Sai trading company: (i) On an average, debtors are collected after 45 days; inventories have an average holding period of 75 days and creditor's payment period on an average is 30 days. (ii) The firm spends a total of ₹ 120 lakhs

annually at a constant rate. (iii) It can earn 10 per cent on investments. From the above information, you are required to CALCULATE:

(a) The cash cycle and cash turnover,

(b) Minimum amounts of cash to be maintained to meet payments as they become due,

(c) Savings by reducing the average inventory holding period by 30 days.

Ans: (a) Cash cycle = 45 days + 75 days – 30 days = 90 days (3 months)

Cash turnover = 12 months (360 days)/3 months (90 days) = 4.

(b) Minimum operating cash = Total operating annual outlay/cash turnover, that is, ₹ 120 lakhs/4 = ₹ 30 lakhs.

(c) Cash cycle = 45 days + 45 days – 30 days = 60 days (2 months).

Cash turnover = 12 months (360 days)/2 months (60 days) = 6.

Minimum operating cash = ₹ 120 lakhs/6 = ₹ 20 lakhs.

Reduction in investments = ₹ 30 lakhs – ₹ 20 lakhs = ₹ 10 lakhs.

Savings = 0.10 × ₹ 10 lakhs = ₹ 1 lakh.

Q 76: A company's requirements for ten days are 6,300 units. The ordering cost per order is ₹ 10 and the carrying cost per unit is ₹ 0.26. You are required to CALCULATE the economic order quantity.

Ans: The economic order quantity is:

EOQ = $\sqrt{\frac{2 \times 6300 \times 10}{0.26}} = \sqrt{\frac{1,26,00}{0.26}}$ = 700 units (approx).

Q 77: Marvel Limited uses a large quantity of salt in its production process. Annual consumption is 60,000 tonnes over a 50-week working year. It costs ₹ 100 to initiate and process an order and delivery follow two weeks later. Storage costs for the salt are estimated at ₹ 0.10 per tonne per annum. The current practice is to order twice a year when the stock falls to 10,000 tonnes. IDENTIFY an appropriate ordering policy for Marvel Limited, and contrast it with the cost of the current policy.

Ans: The recommended policy should be based on the EOQ model.

F = ₹ 100 per order

S = 60,000 tonnes per year

H = ₹ 0.10 per tonne per year

Substituting: EOQ = $\sqrt{\frac{2 \times 100 \times 60{,}000}{0.10}}$ = 10,954 tonnes per order

Number of order per year = 60,000/10,954 = 5.5 orders

Re-order level = 2×60,000/50 = 2,400 tonnes

Total cost of optimum policy = holding cost + ordering costs

= $(0.1 \times 10954)/2$ + $(100 \times 60{,}000)/10{,}954$

= 547.70 + 547.74 = Rs. 1,095

To compare the optimum policy with the current policy, the average level of stock under the current policy must be found. An order is placed when stock falls to 10,000 tonnes, but the lead time is two weeks. The stock used in that time is (60,000×2)/50 = 2,400 tonnes. Before delivery, inventory has fallen to (10,000 – 2,400) = 7,600 tonnes. Orders are made twice per year, and so the order size = 60,000/2 = 30,000 tonnes. The order will increase stock level to 30,000 + 7,600 = 37,600 tonnes. Hence the average stock level = 7,600 + (30,000/2)

= 22,600 tonnes. Total costs of current policy = (0.1×22,600) + (100×2) = ₹ 2,460 per year.

Advise: The recommended policy should be adopted as the costs are less than the current policy (by ₹ 1,365 per year).

Q 78: Mosaic Limited has current sales of ₹ 15 lakhs per year. Cost of sales is 75 per cent of sales and bad debts are one per cent of sales. Cost of sales comprises 80 per cent variable costs and 20 per cent fixed costs, while the company's required rate of return is 12 per cent. Mosaic Limited currently allows customers 30 days' credit, but is considering increasing this to 60 days' credit in order to increase sales.

It has been estimated that this change in policy will increase sales by 15 per cent, while bad debts will increase from one per cent to four per cent. It is not expected that the policy change will result in an increase in fixed costs and creditors and stock will be unchanged.

Should Mosaic Limited introduce the proposed policy? ANALYSE (Assume a 360 days year)

Ans: New level of sales will be 15,00,000 × 1.15 = ₹ 17,25,000

Variable costs are 80% × 75% = 60% of sales

Contribution from sales is therefore 40% of sales

Fixed Cost are 20% × 75% = 15% of sales

Particulars	₹	₹
Proposed investment in debtors = Variable Cost + Fixed Cost* = (17,25,000 × 60%) + (15,00,000 × 15%) = (10,35,000 + 2,25,000) × $\frac{60}{360}$		2,10,000
Current investment in debtors = [(15,00,000 × 60%) + (15,00,000 × 15%)] × $\frac{30}{360}$		93,750
Increase in investment in debtors		1,16,250
Increase in contribution = 15% × 15,00,000 × 40%		90,000
New level of bad debts = (17,25,000 × 4%)	69,000	
Current level of bad debts (15,00,000 × 1%)	15,000	
Increase in bad debts		(54,000)
Additional financing costs = 1,16,250 × 12% =		(13,950)
Savings by introducing change in policy		22,050

* Fixed Cost is taken at existing level in case of proposed investment as well

Advise: Mosaic Limited should introduce the proposed policy.

Q 79: Suppose ABC Ltd. has been offered credit terms from its major supplier of 2/10, net 45. Hence the company has the choice of paying ₹ 10 per ₹ 100 or to invest ₹ 98 for an additional 35 days and eventually pay the supplier ₹ 100 per ₹ 100. The decision as to whether the discount should be accepted depends on the opportunity cost of investing ₹ 98 for 35 days. ANALYSE what should the company do?

Ans: If the company does not avail the cash discount and pays the amount after 45 days, the implied cost of interest per annum would be approximately:

$\left(\frac{100}{100-2}\right)^{\frac{365}{35}} - 1 = 23.5\%$

Now let us assume that ABC Ltd. can invest the additional cash and can obtain an annual return of 25% and if the amount of invoice is ₹ 10,000. The alternatives are as follows:

	Refuse discount	Accept discount
	₹	₹
Payment to supplier	10,000	9,800
Return from investing ₹ 9,800 between day 10 and day 45: $\frac{35}{365} \times ₹ 9,800 \times 25\%$	(235)	
Net Cost	9,765	9,800

Advise: Thus, it is better for the company to refuse the discount, as return on cash retained is more than the saving on account of discount.

Q 80: Define Security Premium Notes. Or

DEFINE Masala bond.

Ans: Secured Premium Notes: Secured Premium Notes is issued along with a detachable warrant and is redeemable after a notified period of say 4 to 7 years. The conversion of detachable warrant into equity shares will have to be done within time period notified by the company.

Or

Masala bond: Masala (means spice) bond is an Indian name used for Rupee denominated bond that Indian corporate borrowers can sell to investors in overseas markets. These bonds are issued outside India but denominated in Indian Rupees. NTPC raised Rs. 2,000 crore via masala bonds for its capital expenditure in the year 2016.

Q 81: Discuss the liquidity vs. profitability issue in management of working capital.

Ans: The trade-off between the components of working capital can be summarised as follows:

Component of Working Capital	Advantages of higher side (Profitability)	Trade-off (between Profitability and Liquidity)	Advantages of lower side (Liquidity)
Inventory	Fewer stock-outs increase the profitability.	Use techniques like EOQ, JIT etc. to carry optimum level of inventory.	Lower inventory requires less capital but endangered stock-out and loss of goodwill.
Receivables	Higher Credit period attract customers and increase revenue	Evaluate the credit policy; use the services of debt management (factoring) agencies.	Cash sales provide liquidity but fails to boost sales and revenue (due to lower credit period)
Pre-payment of expenses	Reduces uncertainty and profitable in inflationary environment.	Cost-benefit analysis required	Improves or maintains liquidity.
Cash and Cash equivalents	Payables are honoured in time, improves the goodwill and helpful in getting future discounts.	Cash budgets and other cash management techniques can be used	Cash can be invested in some other investment avenues
Payables and Expenses	Capital can be used in some other investment avenues	Evaluate the credit policy and related cost.	Payables are honoured in time, improves the goodwill and helpful in getting future discounts.

Q 82: Discuss the estimation of working capital need based on operating cycle process.

Ans: Operating cycle is one of the most reliable methods of Computation of Working Capital. However, other methods like ratio of sales and ratio of fixed investment may also be used to determine the Working Capital requirements. These methods are briefly explained as follows:

(i) Current Assets Holding Period: To estimate working capital needs based on the average holding period of current assets and relating them to costs based on the company's experience in the previous year. This method is essentially based on the Operating Cycle Concept.

(ii) Ratio of Sales: To estimate working capital needs as a ratio of sales on the assumption that current assets change with changes in sales.

iii) Ratio of Fixed Investments: To estimate Working Capital requirements as a percentage of fixed investments. A number of factors will, however, be impacting the choice of method of estimating Working Capital. Factors such as seasonal fluctuations, accurate sales forecast, investment cost and variability in sales price would generally be considered. The production cycle and credit and collection policies of the firm will have an impact on Working Capital requirements. Therefore, they should be given due weightage in projecting
Working Capital requirements.

Q 83: The following figures and ratios are related to a company:

(i) Sales for the year (all credit)	₹ 90,00,000
(ii) Gross Profit ratio	35 percent
(iii) Fixed assets turnover (based on cost of goods sold)	1.5
(iv) Stock turnover (based on cost of goods sold)	6
(v) Liquid ratio	1.5:1
(vi) Current ratio	2.5:1
(vii) Receivables (Debtors) collection period	1 month
(viii) Reserves and surplus to Share capital	1:1.5
(ix) Capital gearing ratio	0.7875
(x) Fixed assets to net worth	1.3 : 1

You are required to PREPARE:

Ans: a) Balance Sheet of the company on the basis of above details.

(b) The statement showing working capital requirement, if the company wants to make a provision for contingencies @15 percent of net working capital.

Ans:

Working Notes:

(i) Cost of Goods Sold = Sales – Gross Profit (35% of Sales)

= ₹ 90,00,000 – ₹ 31,50,000

= ₹ 58,50,000

(ii) Closing Stock = Cost of Goods Sold / Stock Turnover

= ₹ 58,50,000/6 = ₹ 9,75,000

(iii) Fixed Assets = Cost of Goods Sold / Fixed Assets Turnover

= ₹ 58,50,000/1.5

= ₹ 39,00,000

(iv) Current Assets :

Current Ratio = 2.5 and Liquid Ratio = 1.5

Inventories (Stock) = 2.5 – 1.5 = 1

Current Assets = Amount of Inventories (Stock) × 2.5/1

= ₹ 9,75,000 × 2.5/1 = ₹ 24,37,500

Or

Current Ratio / Quick Ratio = Current Assets / Quick Assets

2.5 / 1.5 = Current Assets / (Current Assets – Inventory)

2.5/1.5 Current Assets – 2.5/1.5 x ₹ 9,75,000 = Current Assets

Hence, Current Assets = ₹ 24,37,500

(v) Liquid Assets (Receivables and Cash)

= Current Assets – Inventories (Stock)

= ₹ 24,37,500 – ₹ 9,75,000

= ₹14,62,500

(vi) Receivables (Debtors) = Sales × Debtors Collection period /12

= ₹ 90,00,000 × 1/12

= ₹ 7,50,000

(vii) Cash = Liquid Assets – Receivables (Debtors)

= ₹14,62,500 – ₹ 7,50,000 = ₹ 7,12,500

(viii) Net worth = Fixed Assets /1.3

= ₹ 39,00,000/1.3 = ₹ 30,00,000

(ix) Reserves and Surplus

Reserves and Share Capital = Net worth

Net worth = 1 + 1.5 = 2.5

Reserves and Surplus = ₹ 30,00,000 × 1/1.5

= ₹ 20,00,000

(x) Share Capital = Net worth – Reserves and Surplus

= ₹ 30,00,000 – ₹ 20,00,000

= ₹ 10,00,000

(xi) Current Liabilities = Current Assets/ Current Ratio

= ₹ 24,37,500/2.5 = ₹ 9,75,000

(xii) Long-term Debts

Capital Gearing Ratio = Long-term Debts / Equity Shareholders' Fund

Long-term Debts = ₹30,00,000 × 0.7875 = ₹23,62,500

Q 84: Discuss the advantages and disadvantages of Wealth maximization principle.

Ans: Advantages and disadvantages of Wealth maximization principle.

Advantages:

(i) Emphasizes the long term gains

(ii) Recognizes risk or uncertainty

(iii) Recognizes the timing of returns

(iv) Considers shareholders' return.

Disadvantages:

(i) Offers no clear relationship between financial decisions and share price.

(ii) Can lead to management anxiety and frustration.

Q 85: PQR Ltd. having an annual sales of ₹ 30 lakhs, is re-considering its present collection policy. At present, the average collection period is 50 days and the bad debt losses are 5% of sales. The company is incurring an expenditure of ₹ 30,000 on account of collection of receivables. Cost of funds is 10 percent.

The alternative policies are as under:

	Alternative I	Alternative II
Average Collection Period	40 days	30 days
Bad Debt Losses	4% of sales	3% of sales
Collection Expenses	₹ 60,000	₹ 95,000

DETERMINE the alternatives on the basis of incremental approach and state which alternative is more beneficial.

Ans: Evaluation of Alternative Collection Programmes

	Present Policy	Alternative I	Alternative II
	₹	₹	₹
Sales Revenues	30,00,000	30,00,000	30,00,000
Average Collection Period (ACP) (days)	50	40	30
Receivables (₹) $\left(\text{Sales} \times \frac{\text{ACP}}{360}\right)$	4,16,667	3,33,333	2,50,000
Reduction in Receivables from Present Level (₹)	–	83,334	1,66,667
Savings in Interest @ 10% p.a. **(A)**	–	₹ 8,333	₹ 16,667
% of Bad Debt Loss	5%	4%	3%
Amount (₹)	1,50,000	1,20,000	90,000
Reduction in Bad Debts from Present Level **(B)**	–	30,000	60,000
Incremental Benefits from Present Level **(C) = (A) + (B)**	–	38,333	76,667
Collection Expenses (₹)	30,000	60,000	95,000
Incremental Collection Expenses from Present Level **(D)**	–	30,000	65,000
Incremental Net Benefit **(C – D)**	–	₹ 8,333	₹ 11,667

Conclusion: From the analysis it is apparent that Alternative I has a benefit of ₹ 8,333 and Alternative II has a benefit of ₹ 11,667 over present level. Alternative II has a benefit of ₹ 3,334 more than Alternative I. Hence Alternative II is more viable.

(Note: In absence of Cost of Sales, sales has been taken for purpose of calculating investment in receivables. 1 year = 360 days.)

Q 86: The nominal and real GDP respectively of a country in a particular year are ₹ 3000 Crores and ₹ 4700 Crores respectively. Calculate GDP deflator and comment on the level of prices of the year in comparison with the base year.

Ans: Nominal GDP = ₹ 3000 Crores

Real GDP = ₹ 4700 Crores

GDP Deflator = Nominal GDP/ Real GDP × 100

= 100 X 3000 / 4700 = 63.83

The price level has fallen since GDP deflator is less than 100 at 63.83.

Q 87: Calculate the aggregate value of depreciation when the GDP at market price of a country in a particular year was ₹ 1,100 Crores. Net Factor Income from Abroad was ₹ 100 Crores. The value of Indirect taxes – Subsidies was ₹ 150 Crores and National Income was ₹ 850 Crores.

Ans: Given

GDPMP = 1100 Crores, NFIA = 100 Crores, NIT =150 Crores, NNPFC = 850 Crores

∴ GDPFC = GDPMP- NIT = 1100 – 150 = 950

GNPFC = GDPFC+ NFIA = 950 + 100 = 1050

NNPFC = GNPFC- Depreciation

850 = 1050- Depreciation

Depreciation = 1050 – 850 = 200 Crores.

Q 88: Calculate National Income by Value Added Method with the help of following data

Particulars	Rs. (in crores)
Sales	700
Opening stock	500
Intermediate consumption	350

Closing stock	400
Net factor income from Abroad	30
Depreciation	150
Excise Tax	110
Subsidies	50

Ans: NVA(FC) = GDP (MP) –Depreciation +NFIA- Net Indirect Tax

Where GVA(MP) = Value of output- intermediate consumption

Value of Output = Sales+ change in stock

= 700+ (400-500)=600

GVA(MP) = 600 – 350= 250

Therefore NI = 250-150 +30-(110-50)

= 70 Crores

Q 89: Calculate NI with the help of Expenditure method and income method with the help of following data:

Items	₹ in Crores
Compensation of employees	1,200
Net factor income from Abroad	20
Net indirect taxes	120
Profit	800
Private final consumption expenditure	2,000
Net domestic capital formation	770
Consumption of fixed capital	130
Rent	400
Interest	620
Mixed income of self-employed	700
Net export	30
Govt. final consumption expenditure	1100
Operating surplus	1820
Employer's contribution to social security	300

scheme	

Ans: By Expenditure method

GDPMP = Private final consumption expenditure + Government final consumption expenditure + Gross domestic capital formation

(Net domestic capital formation+ depreciation) + Net export

= 2000 + 1100 + (770+ 130) + 30= 4030Crores

NNPFC or NI = GDPMP- depreciation + NFIA – NIT

= 4030 – 130 + 20 – 120= 3800 Crores

By Income method

NNPFC or NI = compensation of employees+ operating surplus+ Mixed income of self-employed + NFIA

= 1200+ 1820+ 700+ 20= 3740Crores

Q 90: What do you understand by 'value added'?

Ans: Product Method or Value Added Method is also called Industrial Origin Method or Net Output Method. National income by value added method is the sum total of net value added at factor cost across all producing units of the economy. The value added method measures the contribution of each producing enterprise in the domestic territory of the country in an accounting year and entails consolidation of production of each industry less intermediate purchases from all other industries.

Q 91: What are the different methods of calculation of national income?

Ans: There are three methods of measuring national income. They are: Value Added Method (alternatively known as Product Method); Income Method; and Expenditure Method

Value Added Method or Product Method

Step1. Identifying the producing enterprises and classifying them into different sectors according to the nature of their activities

Step 2. Estimating the gross value added (GVAMP) by each producing enterprise

(This is the same as GDPMP)

Gross value added (GVA MP) = Value of output – Intermediate consumption

= (Sales + change in stock) – Intermediate consumption

Step 3.Estimation of National income

For each individual unit, Net value added is found out.

Σ (GVA MP) – Depreciation = Net value added (NVA MP)

Net value added (NVA MP) – Net Indirect taxes = Net Domestic Product (NVA FC)

Net Domestic Product (NVA FC) + (NFIA) = National Income (NNP FC)

Income Method

NDP FC = Sum of factor incomes paid out by all production units within the domestic territory of a country

NNP FC or National Income= Compensation of employees

+ Operating Surplus (rent + interest+ profit)

+ Mixed Income of Self- employed

+ Net Factor Income from Abroad

Expenditure Method

In the expenditure approach, also called Income Disposal Approach, national income is the aggregate final expenditure in an economy during an accounting year.

GDPMP = Σ Final Expenditure

Q 92: (a) The following details of PQR Limited for the year ended 31st March, 2021 are given below:

Operating leverage	1.4
Combined leverage	2.8
Fixed Cost (Excluding interest)	₹ 2.10 lakhs
Sales	₹ 40.00 lakhs
10% Debentures of ₹ 100 each	₹ 25.00 lakhs
Equity Share Capital of ₹ 10 each	₹ 20.00 lakhs

Income tax rate	30 per cent

REQUIRED:

i) Calculate Financial leverage

(ii) Calculate P/V ratio and Earning per Share (EPS)

(iii) If the company belongs to an industry, whose assets turnover is 1.6, does it have a high or low assets Turnover?

(iv) At what level of sales, the Earning before Tax (EBT) of the company will be equal to zero?

In the question, assume that 10% Debentures and Share Capital consists of total liabilities.

(b) Write a short note on electronic fund transfer.

Ans: (a) (i) Financial leverage

Combined Leverage = Operating Leverage x Financial Leverage

So, financial leverage = Combined Leverage/Operating Leverage

= 2.8/1.4 = 2

(ii) P/V Ratio and EPS

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{Contribution} - \text{Fixed Cost}}$$

$$1.4 = \frac{\text{Contribution}}{\text{Contribution} - 2,10,000}$$

1.4 Contribution – 2, 94,000 = Contribution

0.4 Contribution = 2, 94,000

Contribution = 7, 35,000

$$\text{Now, P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{7,35,000}{40,00,000} \times 100 = 18.375\%$$

$$\text{EPS} = \frac{\text{Profit after tax (PAT)}}{\text{No. of equity shares}}$$

Earning before tax (EBT) = Contribution – Fixed Cost – Interest

= 7, 35,000 – 2, 10,000 – 2, 50,000

= 2, 75,000

Profit after tax = EBT – Tax @ 30%

= 2, 75,000 – 82,500

= 1, 92,500

$$\text{EPS} = \frac{1,92,500}{2.00.000} = 0.9625$$

(iii) Asset Turnover

Total Assets = Equity Share Capital + Debentures = ₹ 20 lakhs + ₹ 25 lakhs = ₹ 45 lakhs

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}} = \frac{40,00,000}{45,00,000} = 0.89$$

0.89 < 1.6, means lower than industry turnover.

(iv) EBT zero means 100% reduction in EBT. Since combined leverage is 2.8, sales have to be dropped by 100/2.8 =

35.71%. Hence new sales will be

40, 00,000 x (100% - 35.71%) = 25, 71,600

(b) Electronic Fund Transfer: With the developments which took place in the information technology, the present banking

System has switched over to the computerization of banks branches to offer efficient banking services and cash

Management services to their customers. The network will be linked to the different branches, banks. This helped the

Customers in the following ways:

(i) Instant updating of accounts.

(ii) Quick transfer of funds.

(iii) Instant information about foreign exchange rates.

Q 93: (a) What is Cambridge – Approach theory of demand for Money?

(b) Relevance of Monetary Policy Committee and its impact?

(c) What is the leakages-injections approach in two sector circular flow Model?

(d) What are the conceptual three functions framework of the responsibilities of Government in Public Finance?

Ans: (a) The Cambridge approach holds that money increases utility in the following two ways:

• enabling the possibility of split-up sale and purchase to two different points of time rather than being simultaneous and

• being a hedge against uncertainty.

The Cambridge money demand function is stated as:

Md = K PY

Md = is the demand of money balances,

Y = real national income

P = average price level of currently produced goods and services

PY = nominal income

K = proportion of nominal income (PY) that people want to hold as Cash Balances.

The term 'k' in the above equation is called Cambridge K is a parameter reflecting economic structure and monetary habits, namely the ratio of desired money balances to total transactions to income and the ratio of desired money balances to total transactions.

b) The Monetary Policy Committee was constituted in September 2016. The Committee is required to meet Four times a year and decision taken in the meeting is published after conclusion of the meeting. Based on the review of the macroeconomic and monetary developments in the economy, the monetary policy will determine the policy rate required to achieve the inflation target. The fixing of the benchmark policy interest Rate (repo rate) is made through debate and majority vote by the Panel of experts of the committee.

c) A leakage is referred to as an outflow of income from the circular flow model. Leakages are that part of income which is not used to purchase goods and services or what households withdraw from the circular flow. An injection is an inflow of income to the circular flow. Due to injection of income in the circular flow, the volume of income increases. Investment is an injection in the circular flow. The Circular flow will be balanced and therefore in equilibrium when the injections are equal to the leakages.

(d) Richard Musgrave in his classic treatise "The Theory of Public Finance" introduced the three branch taxonomy of the role of government in a market economy. The functions of the government are to be separated into three namely: resource allocation, income redistribution and macroeconomic stabilization. The allocation and redistribution function are primarily microeconomic functions while stabilization is a macroeconomic function. The allocation function aims to correct the sources of inefficiency in the economic system while distribution role ensures that the distribution of wealth and income is fair. Monetary and fiscal Policy,

maintenance of high levels of employment and price stability fall under the stabilization function.

Q 94: CALCULATE the WACC by using Market value weights.

The capital structure of the company is as under:

Debentures (Rs.100 per debenture)	10,00,000
Preference shares (Rs.100 per share)	10,00,000
Equity shares (Rs.10 per share)	20,00,000
	40,00,000

The market prices of these securities are:

Debentures Rs. 115 per debenture

Preference shares Rs. 120 per preference share

Equity shares Rs. 265 each.

Additional information:

(1) Rs.100 per debenture redeemable at par, 10% coupon rate, 2% floatation cost, 10-year maturity.

(2) Rs.100 per preference share redeemable at par, 5% coupon rate, 2% floatation cost and 10-year maturity.

(3) Equity shares have a floatation cost of Rs. 1 per share.

The next year expected dividend is Rs. 5 with an annual growth of 15%. The firm has the practice of paying all earnings in the form of dividend.

Corporate tax rate is 30%. Use YTM method to calculate cost of debentures and preference shares.

Ans: (i) Cost of Equity (Ke)

$$= \frac{D_1}{P_0 - F} + g = \frac{Rs.5}{Rs.265 - Re.1} + 0.15 \quad = 0.1689 \text{ or } 16.89\%$$

(ii) Cost of Debt (Kd)

Calculation of NPV at discount rate of 5% and 7%

Year	Cash flows (Rs.)	Discount factor @ 5%	Present Value	Discount factor @ 7%	Present Value (Rs.)
0	112.7	1.000	(112.7)	1.000	(112.7)
1 to 10	7	7.722	54.05	7.024	49.17
10	100	0.614	61.40	0.508	50.80
NPV		+2.75			-12.73

Calculation of IRR

$$IRR = 5\% + \frac{2.75}{2.75-(-12.73)}(7\%-5\%) = 5\% + \frac{2.75}{15.48}(7\%-5\%) = 5.36\%$$

(iii) Cost of Preference shares (Kp)

Calculation of NPV at discount rate of 2% and 5%

Year	Cash flows (Rs.)	Discount factor @ 5%	Present Value	Discount factor @ 7%	Present Value (Rs.)
0	117.6	1.000	(117.6)	1.000	(117.6)
1 to 10	5	8.983	44.92	7.722	38.61
10	100	0.820	82.00	0.614	61.40
NPV		+9.32			-17.59

$$IRR = 2\% + \frac{9.32}{9.32-(-17.59)}(5\%-2\%) = 2\% + \frac{9.32}{26.91}(5\%-2\%) = 3.04\%$$

Cost of Preference Shares (K_p) = 3.04%

Calculation of WACC using market value weights

Source of capital	Market Value	Weights	After tax cost of capital	WACC (Ko)
	(Rs.)	(a)	(b)	(c) = (a)×(b)
10% Debentures (Rs.115× 10,000)	11,50,000	0.021	0.0536	0.00113
5% Preference shares (Rs.120× 10,000)	12,00,000	0.022	0.0304	0.00067
Equity shares (Rs.265 × 2,00,000)	5,30,00,000	0.957	0.1689	0.16164
	5,53,50,000	1.000		0.16344

Q 95: PREPARE monthly cash budget for the first six months of 2021 on the basis of the following information:

(i) Actual and estimated monthly sales are as follows:

Actual	(Rs.)	Estimated	(Rs.)
October 2020	2,00,000	January 2021	60,000
November 2020	2,20,000	February 2021	80,000
December 2020	2,40,000	March 2021	1,00,000
		April 2021	1,20,000
		May 2021	80,000
		June 2021	60,000
		July 2021	1,20,000

(ii) Operating Expenses (including salary & wages) are estimated to be payable as follows:

Month	(Rs.)	Month	(Rs.)
January 2021	22,000	April 2021	30,000
February 2021	25,000	May 2021	25,000
March 2021	30,000	June 2021	24,000

(iii) Of the sales, 75% is on credit and 25% for cash. 60% of the credit sales are collected after one month,

30% after two months and 10% after three months.

(iv) Purchases amount to 80% of sales and are made on credit and paid for in the month preceding the sales.

(v) The firm has 12% debentures of Rs.1, 00,000. Interest on these has to be paid quarterly in

January, April

And so on.

(vi) The firm is to make an advance payment of tax of Rs. 5,000 in April.

(vii) The firm had a cash balance of Rs. 40,000 at 31st Dec. 2020, which is the minimum desired level of cash Balance. Any cash surplus/deficit above/below this level is made up by temporary investments/liquidation of temporary investments or temporary borrowings at the end of each month (interest on these to be ignored).

Ans: Monthly Cash Budget for first six months of 2021

(Amount in Rs.)

Particulars	Jan.	Feb.	Mar.	April	May	June
Opening balance	40,000	40,000	40,000	40,000	40,000	40,000
Receipts:						
Cash sales	15,000	20,000	25,000	30,000	20,000	15,000
Collection from debtors	1,72,500	97,500	67,500	67,500	82,500	70,500
Total cash available (A)	2,27,500	1,57,500	1,32,500	1,37,500	1,42,500	1,25,500
Payments:						
Purchases	64,000	80,000	96,000	64,000	48,000	96,000
Operating Expenses	22,000	25,000	30,000	30,000	25,000	24,000
Interest on debentures	3,000	-	-	3,000	-	-
Tax payment	-	-	-	5,000	-	-
Total payments (B)	89,000	1,05,000	1,26,000	1,02,000	73,000	1,20,000
Minimum cash balance desired	40,000	40,000	40,000	40,000	40,000	40,000
Total cash needed (C)	1,29,000	1,45,000	1,66,000	1,42,000	1,13,000	1,60,000
Surplus/(deficit) (A - C)	98,500	12,500	(33,500)	(4,500)	29,500	(34,500)
Investment/financing						
Temporary Investments	(98,500)	(12,500)	-	-	(29,500)	-
Liquidation of temporary investments or temporary borrowings			33,500	4,500	-	34,500
Total effect of investment/financing(D)	(98,500)	(12,500)	33,500	4,500	(29,500)	34,500
Closing cash balance (A + D - B)	40,000	40,000	40,000	40,000	40,000	40,000

Workings:

1. Collection from debtors: (Amount in Rs.)

	Year 2020			Year 2021					
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
Total sales	2,00,000	2,20,000	2,40,000	60,000	80,000	1,00,000	1,20,000	80,000	60,000
Credit sales (75% of total sales)	1,50,000	1,65,000	1,80,000	45,000	60,000	75,000	90,000	60,000	45,000
Collections:									
One month		90,000	99,000	1,08,000	27,000	36,000	45,000	54,000	36,000
Two months			45,000	49,500	54,000	13,500	18,000	22,500	27,000
Three months				15,000	16,500	18,000	4,500	6,000	7,500
Total collections				**1,72,500**	**97,500**	**67,500**	**67,500**	**82,500**	**70,500**

2. Payment to Creditors: (Amount in Rs.)

	Year 2021						
	Jan	Feb	Mar	Apr	May	Jun	Jul
Total sales	60,000	80,000	1,00,000	1,20,000	80,000	60,000	1,20,000
Purchases (80% of total sales)	48,000	64,000	80,000	96,000	64,000	48,000	96,000
Payment: One month prior	**64,000**	**80,000**	**96,000**	**64,000**	**48,000**	**96,000**	

Q 96: (i) How does arbitrage prevents the risk arising out of the fluctuations in the exchange rate?

(ii) Information failure is also a reason for market failure. With the Intervention of government this failure is corrected how?

(iii) How deflationary gap arises in an economy?

(iv) What are the major component of Reserve Money?

Ans: (i) Arbitrage refers to the practice of making risk-less profits by intelligently exploiting price differences of an asset at different dealing places. On account of arbitrage, regardless of physical location, at any given moment, all markets tend to have the same exchange rate for a given currency. When price differences occur in different markets, participants purchase foreign exchange in a low-priced market for resale in a high-priced market and makes profit in this process. Due to the operation of price mechanism, the price is driven up in the low-priced market and pushed down in the high priced market. This activity will continue until the prices in the two markets are equalized, or until they differ only by the amount of transaction costs involved in the operation. Since forex markets are efficient, any profit spread on a given currency is quickly arbitraged away.

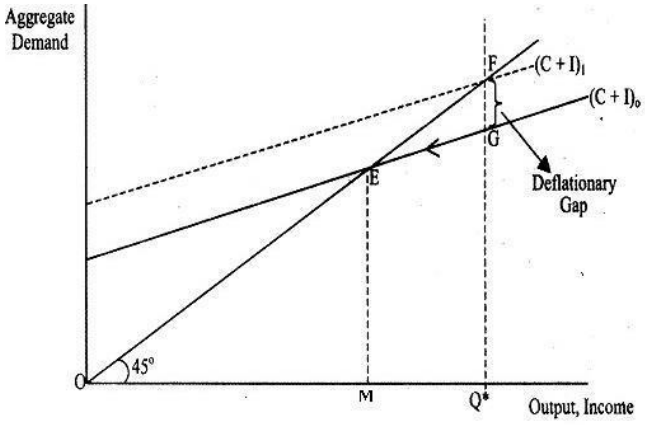
(ii) Information failure is widespread in numerous market exchanges. When this happens misallocation of scarce resources takes place and equilibrium price and quantity is not established through price mechanism. This results in market failure.

Complete information is an important element of competitive market. Perfect information implies that both buyers and sellers have complete information about anything that may influence their decision making. However, this assumption is not fully satisfied in real markets due to the following reasons.

- • Often, the nature of products and services tends to be highly complex

- • In many cases consumers are unable to quickly / cheaply find sufficient information on the best prices as well as quality for different products
- • People are ignorant or not aware of many matters in the market

Deflationary gap is thus a measure of the extent of deficiency of aggregate demand, and it causes the economy's income, output, and employment to decline, thus pushing the economy to under- employment equilibrium. The macro equilibrium occurs at a level of GDP less than potential GDP; thus, there is cyclical unemployment i.e., rate of unemployment is higher than the natural rate.



In the figure given above OQ* is the full employment level of output. For the economy to be at full employment equilibrium, aggregate demand should be Q*F. If the aggregate demand is Q*G, it represents a situation of deficient demand. The resulting deflationary gap is FG.

(iv) Reserve money, also known as central bank money, base money, or high-powered money, needs a special mention as it plays a critical role in the determination of the total supply of money. Reserve money determines the level of liquidity and price level in the economy and, therefore, its management is of crucial importance to stabilize liquidity,

Economic growth, and price level in an economy. Reserve money is comprised of the currency held by the public, cash reserves of banks and other deposits of the RBI.

Q 97: A company wants to buy a machine, and two different models namely A and B are available.

Following further particulars are available:

Particulars	Machine-A	Machine-B
Original Cost (₹)	8,00,000	6,00,000
Estimated Life in years	4	4
Salvage Value (₹)	0	0

The company provides depreciation under Straight Line Method. Income tax rate applicable is 30%.

The present value of ₹ 1 at 12% discounting factor and net profit before depreciation and tax are as under:

Year	Net Profit Before Depreciation and tax		PV Factor
	Machine-A ₹	Machine-B ₹	
1.	2,30,000	1,75,000	0.893
2.	2,40,000	2,60,000	0.797
3.	2,20,000	3,20,000	0.712
4.	5,60,000	1,50,000	0.636

Calculate:

1. NPV (Net Present Value)

2. Discounted pay-back period

3. PI (Profitability Index)

Suggest: Purchase of which machine is more beneficial under discounted pay-back period Method, NPV method and PI method.

Ans: Workings:

(i) Calculation of Annual Depreciation

$$\text{Depreciation on Machine} - A = \frac{₹\,8,00,000}{4} = ₹\,2,00,000$$

$$\text{Depreciation on Machine} - B = \frac{₹\,6,00,000}{4} = ₹\,1,50,000$$

(ii)Calculation of Annual Cash Inflows

Particulars	Machine-A (₹)			
	1	2	3	4
Net Profit before Depreciation and Tax	2,30,000	2,40,000	2,20,000	5,60,000
Less: Depreciation	2,00,000	2,00,000	2,00,000	2,00,000
Profit before Tax	30,000	40,000	20,000	3,60,000
Less: Tax @ 30%	9,000	12,000	6,000	1,08,000
Profit after Tax	21,000	28,000	14,000	2,52,000
Add: Depreciation	2,00,000	2,00,000	2,00,000	2,00,000
Annual Cash Inflows	**2,21,000**	**2,28,000**	**2,14,000**	**4,52,000**

Particulars	Machine-B (₹)			
	1	2	3	4
Net Profit before Depreciation and Tax	1,75,000	2,60,000	3,20,000	1,50,000
Less: Depreciation	1,50,000	1,50,000	1,50,000	1,50,000
Profit before Tax	25,000	1,10,000	1,70,000	0
Less: Tax @ 30%	7,500	33,000	51,000	0
Profit after Tax	17,500	77,000	1,19,000	0
Add: Depreciation	1,50,000	1,50,000	1,50,000	1,50,000
Annual Cash Inflows	**1,67,500**	**2,27,000**	**2,69,000**	**1,50,000**

(iii) Calculation of PV of Cash Flows

	Machine – A				Machine - B		
Year	PV of Re 1 @ 12%	Cash flow (₹)	PV (₹)	Cumulative PV (₹)	Cash flow (₹)	PV (₹)	Cumulative PV (₹)
1	0.893	2,21,000	1,97,353	1,97,353	1,67,500	1,49,578	1,49,578
2	0.797	2,28,000	1,81,716	3,79,069	2,27,000	1,80,919	3,30,497
3	0.712	2,14,000	1,52,368	5,31,437	2,69,000	1,91,528	5,22,025
4	0.636	4,52,000	2,87,472	8,18,909	1,50,000	95,400	6,17,425

1. NPV (Net Present Value)

Machine – A

NPV = ₹ 8, 18,909 - ₹ 8, 00,000 = ₹ 18,909

Machine – B

NPV = ₹ 6, 17,425 – ₹ 6, 00,000 = ₹ 17,425

2. Discounted Payback Period

Machine – A

$$\text{Discounted Payback Period} = 3 + \frac{₹\,8,00,000 - ₹\,5,31,437}{₹\,2,87,472}$$

$$= 3 + 0.934$$

$$= 3.934 \text{ years or } 3 \text{ years } 11.21 \text{ months}$$

Machine – B

$$\text{Discounted Payback Period} = 3 + \frac{₹\,6,00,000 - ₹\,5,22,025}{₹\,95,400}$$

$$= 3 + 0.817$$

$$= 3.817 \text{ years or } 3 \text{ years } 9.80 \text{ months}$$

3. PI (Profitability Index)

Machine – A

$$\text{Profitability Index} = \frac{₹\,8,18,909}{₹\,8,00,000} = 1.024$$

Machine – B

$$\text{Profitability Index} = \frac{₹\,6,17,425}{₹\,6,00,000} = 1.029$$

Suggestion:

Method	Machine - A	Machine - B	Suggested Machine
Net Present Value	₹ 18,909	₹ 17,425	**Machine A**
Discounted Payback Period	3.934 years	3.817 years	**Machine B**
Profitability Index	1.024	1.029	**Machine B**

Q 98: A Limited and B Limited are identical except for capital structures. A Ltd. has 60 per cent debt

And 40 per cent equity, whereas B Ltd. has 20 per cent debt and 80 per cent equity. (All Percentages are in market-value terms.) The borrowing rate for both companies is 8 per cent in a no-tax world, and capital markets are assumed to be perfect.

(a) (i) If X, owns 3 per cent of the equity shares of A Ltd., determine his return if the Company has net operating income of ₹ 4, 50,000 and the overall capitalization rate Of the company, (Ko) is 18 per cent.

(ii) Calculate the implied required rate of return on equity of A Ltd.

(b) B Ltd. has the same net operating income as A Ltd.

(i) Calculate the implied required equity return of B Ltd.

(ii) Analyse why it differs from that of A Ltd.

Ans:

(a) Value of A Ltd. $= \frac{NOI}{K_o} = \frac{₹\ 4,50,000}{18\%} = ₹\ 25,00,000$

(i) Return on Shares of X on A Ltd.

Particulars	Amount (₹)
Value of the company	25,00,000
Market value of debt (60% x ₹ 25,00,000)	15,00,000
Market value of shares (40% x ₹ 25,00,000)	**10,00,000**
Particulars	**Amount (₹)**
Net operating income	4,50,000
Interest on debt (8% × ₹ 15,00,000)	1,20,000
Earnings available to shareholders	**3,30,000**
Return on 3% shares (3% × ₹ 3,30,000)	**9,900**

(ii) Implied required rate of return on equity of A Ltd. $= \frac{₹\ 3,30,000}{₹\ 10,00,000} = 33\%$

(b) (i) Calculation of Implied rate of return of B Ltd

Particulars	Amount (₹)
Total value of company	25,00,000
Market value of debt (20% × ₹ 25,00,000)	5,00,000
Market value of equity (80% × ₹ 25,00,000)	**20,00,000**
Particulars	**Amount (₹)**
Net operating income	4,50,000
Interest on debt (8% × ₹ 5,00,000)	40,000
Earnings available to shareholders	**4,10,000**

Implied required rate of return on equity $= \frac{₹\ 4,10,000}{₹\ 20,00,000} = 20.5\%$

(ii) Implied required rate of return on equity of B Ltd. is lower than that of A Ltd. because B Ltd. uses less debt in its capital structure. As the equity capitalisation is a linear Function of the debt-to-equity ratio when we use the net operating income approach,

The decline in required equity return offsets exactly the disadvantage of not employing
So much in the way of “cheaper” debt funds.

Q 99: a. (i) explain the various types of externalities.
(ii) Which method is used in India for measurement of National Income? Also, state the method which is considered the most suitable for measurement of National Income of the developed economies.

Ans: (i) The various types of Externalities

An externality is a cost or benefit of an economic activity experienced by an unrelated third party who did not choose to incur that cost or benefit. These costs and benefits are not reflected in market prices.

Externalities can be positive or negative. Negative externalities occur when the action of one party imposes costs on another party. Positive externalities occur when the action of one party confers benefits on another party.

The four possible types of externalities are:

(a) Negative production externalities

(b) Positive production externalities

(c) Negative consumption externalities,

(d) Positive consumption externalities

(a) Negative Production Externalities

A negative production externality initiated in production which imposes an external cost on others may be received by another in consumption or production. As an example, a negative production externality occurs when a factory discharges untreated waste water into a nearby river and pollutes the water.

• • This negative externality is said to be received in consumption when it causes health hazards for people who use the water for drinking and bathing.

• • This negative externality is said to be received in production when pollution in the river affects fish output and loss of fish resources resulting in less catch for fishermen.

(b) Positive production externalities

A positive production externality initiated in production that confers external benefits on others may be received in production or in consumption. For example, positive production externality occurs when a firm offers training to its employees for increasing their skills. Training generates

positive benefits on the productive efficiency of other firms when they hire such workers as they change their jobs.

• • A positive production externality is received in consumption when an individual raises an attractive garden and the persons walking by enjoy the garden.

(b) Positive production externalities

A positive production externality initiated in production that confers external benefits on others may be received in production or in consumption. For example, positive production externality occurs when a firm offers training to its employees for increasing their skills. Training generates positive benefits on the productive efficiency of other firms when they hire such workers as they change their jobs.

• • A positive production externality is received in consumption when an individual raises an attractive garden and the persons walking by enjoy the garden.

(d) Positive consumption externalities

A positive consumption externality occurs when an individual's consumption increases the well-being of others but the individual is not compensated by those others. For example, if people get immunized against contagious diseases, they would confer a social benefit on others as well by preventing others from getting infected.

• • Consumption of the services of a health club by the employees of a firm would result in an external benefit to the firm in the form of increased efficiency and productivity.

(ii) The method used in India for measurement of National Income

In India, the Central Statistics Office under the Ministry of Statistics and Programme Implementation is responsible for macro-economic data gathering and statistical record keeping.

Since reliable statistical data are not available, it is not possible to estimate India's national income wholly by one method. Therefore, a combination of output method and income method is used. The value-added method is used largely in the commodity producing sectors like agriculture and manufacturing. Thus, in agricultural sector, net value added is estimated by the production method, in small scale sector net value added is estimated by the income method and in the construction sector net value added is estimated by the expenditure method also.

The method which is considered suitable for measurement of National Income of developed economies:

Income method may be most suitable for developed economies where data in respect of factor

income are readily available. With the growing facility in the use of the commodity flow method of estimating expenditures, an increasing proportion of the national income is being estimated by expenditure method.

Q 100: (a) (i) Define common resources. Why are they overused?

(ii) Explain the free rider problem. Give examples

(b) Distinguish between Leakages and Injections in the circular flow of income?

(c) Differentiate Trade- Related Investment Measures (TRIMS) and Trade-Related Aspects of Intellectual Property Rights (TRIPS).

Ans: (a) (i) Common access resources or common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption lessens the benefits available for others. Since price mechanism does not apply to 'common resources', producers and consumers do not pay for these resources and therefore, they overuse them and cause their depletion and degradation.

(ii) The incentive to let other people pay for a good or service, the benefits of which are enjoyed by an individual is known as the free rider problem. In other words, free riding is 'benefiting from the actions of others without paying'. Example is national defence. The government provides defence for all its citizens regardless of much they contribute in tax es. Another example is Wikipedia- few people contribute (financially or otherwise), but everyone gets to use it.

(b) Leakages are withdrawals from the economy as a result of taxation, spending on imports, and monetary savings. It reduces the flow of income. On the other hand, Injections are additions and contributions to the economy through government spending, money from exports, and investments made by firms. Injections increase the flow of income.

(c) Trade-Related Investment Measures (TRIMs) is an agreement on trade related investment measures which specifies the rule that are applicable to domestic regulation a country applies to foreign investors. The agreement is applicable to all the members of WTO. It expands disciplines governing investment measures in relation to cross-border investments by stipulating that countries receiving foreign investments shall not impose investment measures such as requirements, conditions and restrictions inconsistent with the provisions of the principle of national treatment and general elimination of quantitative restrictions. On the other hand,

Trade - Related Aspects of Intellectual Property Rights (TRIPS) is an international agreement among various members of WTO on intellectual property rights. It is one of the most comprehensive multilateral agreements on intellectual rights. It stipulates most -favoured-nation treatment and national treatment for intellectual properties, such as copyright, trademarks, geographical indications, industrial designs, patents, IC layout designs and undisclosed information.