Chapter 4 – Maths for Finance

Simple Interest and Compound Interest

PYQ May 18

(1) If ₹ 1,000 be invested at interest rate of 5% and the interest be added to the principal every 10 years, then the number of years in which it will amount to ₹ 2,000 is: Use Simple Int.

a. $16\frac{2}{3}$ years b. $6\frac{1}{4}$ years

c. 16 years d. $6\frac{2}{3}$ years

PYQ May 18

(2) A person borrows ₹ 5,000 for 2 years at 4% per annual simple interest. He immediately leads to another person at 6.25% per annum for 2 years find his gain in the transaction for year:

a. ₹ 112.50 b. ₹ 225

c. ₹ 125 d. ₹ 107.50

PYQ May 18

(3) If an amount is kept at S I. it earns an interest of ₹ 600 in first two years but when kept at compound interest it earns an interest of ₹ 660 for the same period, then the rate of interest and principal amount respectively are:

a. 20%, ₹ 1,200 b. 20%, ₹ 1,500

c. 10%, ₹ 1,200 d. 10%, ₹ 1,500

PYQ Nov. 18

(4) If ₹ 10,000 is invested at 8% p.a. compounded quarterly, then the value of the investment after 2 years is: $[(1+0.02)^8 = 1.171659]$ * 10000

a. ₹ 11,716.59 b. ₹ 10,716.59

c. ₹ 117.1659 d. None of these

PYQ Nov. 18

(5) A bank pays 10% rate of interest compounded annually. A sum of ₹ 400 is deposited in the bank. The amount at the end if 1 year will be

a. ₹ 440 b. ₹ 439

c. ₹ 441 d. ₹ 442

PYQ Nov. 18

(6) A certain amount of money doubles itself in 10 years when deposited on simple interest. It would triple itself in

a. 20 years b. 15 years

c. 25 years d. 30 years

PYQ Nov. 18

(7) A man deposited ₹ 8,000 in a bank for 3 years at 5% per annum compound interest, after 3 years he will get

a. ₹ 8,800 b. ₹ 9,261

c. ₹ 9,200 d. ₹ 9,000

PYQ Nov. 18

(8) If in two years' time a principal of ₹100 amounts to ₹ 121 when the interest at r% is compounded annually, then the value of r is

a. 10.5% b. 10%

c. 15% d. 14%

PYQ Nov. 18

(9) A certain sum of money Q was deposited for 5years and 4 months at 4.5% simple interest and amounted to ₹ 248, then the value of Q is

a. ₹ 200 b. ₹ 210 24800/124 = 200

c. ₹ 220 d. ₹ 240

PYQ Nov. 18

(10) If compound interest on a sum for 2 years at 4% per annum is ₹ 102, then the simple interest on the same sum for the same period at the same rate will be

a. ₹ 99 b. ₹ 101

c. ₹ 100 d. ₹ 95

PYQ Nov. 18

(11) If the difference between the compound interest compounded annually and simple interest on a certain amount at 10% per annum for two years is ₹ 372, then the principal amount is 372 / 0.01 = P

a. ₹ 37,200 b. ₹ 37,000

c. ₹ 37,500 d. None of these

PYQ Nov. 18

(12) The effective rate of interest for one year deposit corresponding to a nominal 7% rate of interest per annum convertible quarterly is

a. 7% b. 7.5%

c. 7.4% d. 7.18%

PYQ Nov. 18

(13) How much will ₹ 25,000 amount to in 2 years at compound interest if the rates for the successive years are 4% and 5% per year

a. ₹ 27,300 b. ₹ 27,000

c. ₹ 27,500 d. ₹ 27,900

If Int of first 10 years is 500 and Principle is 1000+500 = 1500

500 × 100 / 1500 × 5 = t

50000 / 7500 = 6.66 years

Now, then remain time to earn 500 for total of 2000 is 6.66

So, total time is 10 + 6.66 = 16.66 years 16 2/3

PYQ Nov. 18

(14) ₹ 8,000/- at 10% p.a. interest compounded half yearly will become at the end of one year
a. ₹ 8,800 b. ₹ 8,820
c. ₹ 8,900 d. ₹ 9,600

PYQ June 19

(15) The certain sum of money became ₹ 692 in 2 years and ₹ 800 in 5 years then the principal amount is
a. ₹ 520 b. ₹ 620
c. ₹ 720 d. ₹ 820

PYQ June 19

(16) A sum of money amount to ₹ 6,200 in 2 years and ₹ 7,400 in 3 years as per S.I. then the principal is
a. ₹ 3,000 b. ₹ 3,500
c. ₹ 3,800 d. None of these

PYQ June 19

(17) A sum was invested for 3 years as per C.I. and the rate of interest for first year is 9%, 2nd year is 6% and 3rd year is 3% p.a. respectively. Find the sum if the amount in three years is ₹ 550?
a. ₹ 250 b. ₹ 300
c. ₹ 462.16 d. ₹ 350

PYQ June 19

(18) $P = ₹\ 5,000\ R = 15\%\ T = 4\frac{1}{2}$ years using $I = \frac{PTR}{100}$ then I will be
a. ₹ 3,375 b. ₹ 3,300
c. ₹ 3,735 d. None of these

PYQ June 19

(19) The effective rate of interest does not depend upon
a. Amount of Principal
b. Amount of Interest
c. Number of Conversion Periods
d. None of these

PYQ June 19

(20) If $P\ i^2 = ₹\ 96$, and $R = 8\%$ compounded annually then P =
a. ₹ 14,000 b. ₹ 15,000
c. ₹ 16,000 d. ₹ 17,000

PYQ June 19

(21) In SI if the principal is ₹ 2,000 and the rate and time are the roots of the equation $x^2 - 11x + 30 = 0$ then SI is
a. ₹ 500 b. ₹ 600
c. ₹ 700 d. ₹ 800

PYQ Nov. 19

(22) ★ A man invests ₹ 12,000 at 10% p.a. and another sum of money at 20% p.a. for one year. The total investment earns at 14% p.a. simple interest the total investment is:
a. ₹ 8,000 b. ₹ 20,000
c. ₹ 14,000 d. ₹ 16,000

PYQ Nov. 19

(23) The difference in simple interest of a sum invested of ₹ 1,500 for 3 years is ₹ 18. The difference in their rates is:
a. 0.4 b. 0.6
c. 0.8 d. 0.10

PYQ Nov. 19

(24) Find the effective rate of interest on ₹10,000 on which interest is payable half yearly at 5% p.a.
a. 5.06% b. 4%
c. 0.4% d. 3%

PYQ Nov. 19

(25) Find the effective rate of interest at 10% p.a. when interest is payable quarterly
a. 10.38% b. 5%
c. 5.04% d. 4%

PYQ Nov. 19

(26) What will be the population after 3 years when present population is ₹ 25,000 and population increases at the rate of 3% in 1 year, at 4% in 2nd year and 5% in 3rd year?
a. ₹ 28,119 b. ₹ 29,118
c. ₹ 27,000 d. ₹ 30,000

PYQ Nov. 19

(27) The value of scooter is ₹ 10,000 find its value after 7 years if rate of depreciation is 10% p.a.
a. ₹ 4,782.96 b. ₹ 4,278.69
c. ₹ 42,079 d. ₹ 42,000

PYQ Nov. 19

(28) SI = 0.125P at 10% p.a. Find time.
a. 1.25 years b. 25 years
c. 0.25 years d. None of these

PYQ Nov. 19

(29) Scrap value of a machine valued at ₹10,00,000, after 10 years within depreciation at 10% p.a.:
a. ₹ 3,48,678.44 b. ₹ 3,84,679.45
c. ₹ 4,00,000 d. ₹ 3,00,000

PYQ Nov. 19

(30) The difference between CI and SI for 2 years, is 21. If rate of interest is 5% find principal
a. ₹ 8,400 b. ₹ 4,800
c. ₹ 8,000 d. ₹ 8,200

PYQ Nov. 20

(31) On what sum will the compound interest at 5% per annum for 2 years compounded annually be ₹ 3,280.
a. ₹ 32,000 b. ₹ 16,000
c. ₹ 48,000 d. ₹ 64,000

PYQ Nov. 20

(32) An amount P becomes ₹ 5,100.5 and ₹ 5,203 after second and fourth years respectively at 1% of interest per annum compounded annually. Thus value of P and R are:
a. ₹ 4,000 and 1.5 b. ₹ 5,000 and 1
c. ₹ 6,000 and 2 d. ₹ 5,500 and 3

PYQ Nov. 20

(33) A certain sum invested at 4% per annum compounded semi-annually amounts to ₹1,20,000 at the end of one year. Find the sum:
a. 1,15,340 b. 1,10,120
c. 1,12,812 d. 1,13,113

PYQ Nov. 20

(34) Find the compound interest if an amount of ₹50,000 is deposited in bank for one year at the rate of 8% per annum compounded semi-annually.
a. ₹ 3,080 b. ₹ 4,080
c. ₹ 5,456 d. ₹ 7,856

PYQ Nov. 20

(35) ★ An amount is lent at a nominal rate of 4.5% per annum compounded quarterly. What would be the gain in rupees over when compounded annually?
a. 0.56 b. 0.45
c. 0.076 d. 0.85

PYQ Nov. 20

(36) What sum of money will produce ₹ 42,800 as an interest in 3 years and 3 months at 2.5% p.a. simple interest?
a. ₹ 3,78,000 b. ₹ 5,26,769
c. ₹ 4,22,000 d. ₹ 2,24,000

PYQ Nov. 20

(37) ★ The ratio of principal and the compound interest value for three years (compounded annually) is 216 : 127. The rate of interest is:
a. 0.1777 b. 0.1567
c. 0.1666 d. 0.1587

PYQ Jan. 21

(38) ★ A certain sum amounted to ₹ 575 at 5% in a time in which ₹ 750 amounted to ₹ 840 at 4%. If the rate of interest is simple, find the sum-
a. 525 b. 550
c. 515 d. 500

PYQ Jan. 21

(39) Find the amount of compounded interest, if an amount of ₹ 50,000 is deposited in a bank for one year at the rate of 8% per annum compounded semiannually
a. 3,080 b. 4,080
c. 5,456 d. 7,856

PYQ Jan. 21

(40) The population of a town increase by 2% of the population at the beginning of the year. The number of year by which the total increases in population would be 40% is:
a. 7 years
b. 10 years
c. 17 years
d. 19 years (approx.)

PYQ Jan. 21

(41) ★ Two equal amounts of money are deposited in two banks each at 15% p.a. fix 3.5 year in the bank and fix 5 years in the either. The difference between the interest amount from the bank in ₹ 144. Find the sum
a. ₹ 620 b. ₹ 640
c. ₹ 820 d. ₹ 840

PYQ Jan. 21

(42) The simple interest on sum at 4% p.a. for 2 years is ₹ 80. Find the CI on the same sum for the same period.
a. ₹ 81.60 b. ₹ 80.80
c. ₹ 83.20 d. ₹ 82.30

PYQ Jan. 21

(43) Which is a better investment 9% p.a. compounded quarterly or 9.1% p.a. simple interest?
a. 9% compounded
b. 9.1% S.T.
c. Both are same
d. Cannot be said

PYQ Jan. 21

(44) The effective rate of interest corresponding to a nominal rate of 7% p.a. compounded quarterly
a. 7.5% b. 7.6%
c. 7.7% d. 7.18%

PYQ Jan. 21

(45) ★ A man invested one-third of his capital at 7% one fourth at 8% and the remainder at 10%. If the annual income is ₹ 561. The capital is -
a. ₹ 4,400 b. ₹ 5,500
c. ₹ 6,600 d. ₹ 5,800

PYQ Jan. 21

(46) A sum of money is lent at C.I. rate 20% p.a. 2 years. It would fetch ₹ 482 more if the interest is compounded half yearly. The sum is:
a. ₹ 19,800 b. ₹ 19,900
c. ₹ 20,000 d. ₹ 20,100

PYQ Jan. 21

(47) What 'I' denote the actual rate of interest in decimal, and n denote the number of conversion periods, the formula for computing the effective rate of interest E is given by.
a. $(1+i)^n$ b. $(1+i)^n - 1$
c. $1-(1+i)^n$ d. $(1+i)^{-n}$

PYQ July 21

(48) The effective rate of return for 24% per annum convertible monthly is given as:
a. 24% b. 26.82%
c. 18% d. 24.24%

PYQ July 21

(49) What is the compound interest (in ₹) on a sum of ₹ 12,600 for 1.25 years at 20% per annum if the interest is compounded half yearly?
a. 4,271 b. 4,171
c. 4,711 d. 4,117

PYQ July 21

(50) ★ A sum of ₹ 7,500 amounts to ₹ 9,075 at 10% p.a., interest being compounded yearly in a certain time. The simple interest on the same sum for the same time and the same rate is:
a. 1,000 b. 1,250
c. 1,800 d. 1,500

PYQ July 21

(51) ★ A certain sum amounts to ₹ 15,748 in 3 years at simple interest at r% p.a. The same sum amounts to ₹ 16,510 at (r + 2) % p.a. SI in the same time. What is the value of r?
a. 10% b. 8%
c. 12% d. 6%

PYQ July 21

(52) What is the difference (in ₹) between the simple interest and the compound interest on a sum of ₹ 8,000 for $2\frac{2}{5}$ years at the rate of 10% p.a. when the interest is compounded yearly?
a. 136.12 b. 129.50
c. 151.75 d. 147.20

PYQ July 21

(53) ★ A sum of ₹ x amounts to ₹ 27,900 in 3 years and to ₹ 41,850 in 6 years at a certain rate percent per annum, when the interest is compounded yearly. The value of x is:
a. 16,080 b. 18,600
c. 18,060 d. 16,800

PYQ Dec. 21

(54) Rahul invested ₹ 70,000 in a bank at the rate of 6.5% p.a. simple interest rate. He received ₹85,925 after the end of term. Find out the period for which sum was invested by Rahul.
a. 2 years b. 3 years
c. 3.5 years d. 2.5 years

PYQ Dec. 21

(55) A company needs ₹ 10,000 in five years to replace as equipment. How much (in ₹) should be invested now at an interest rate of 8% p.a. is order to provide for this equipment?
a. 6,000 b. 6,805
c. 10,000 d. 11,000

PYQ Dec. 21

(56) R needs money to pay ₹ 5,00,000 in 10 years. He invested a sum in a scheme at 9% rate of interest compounded half-yearly. How much amount (in ₹) he invested? $1.046^{20} = 2.41171$
a. 3,07,321 b. 2,70,321
c. 2,07,321 d. 3,40,321

PYQ Dec. 21

(57) ★ An amount is lent at R% simple interest for R years and the simple interest amount was one-fourth of the principal amount. Then R is
a. 5 b. 6
c. $5^{1/2}$ d. $6^{1/2}$

PYQ Dec. 21

(58) ★ A sum of money is put at 20% compound interest rate p.a. at which year the aggregated amount just exceeds the double of the original sum?
a. 6 b. 5
c. 4 d. 3

PYQ June 22

(59) In how much time a sum of amount doubles at simple interest at 12.5% rate?
a. 7 years b. 8 years
c. 9 years d. 10 years

PYQ June 22

(60) The effective rate of interest corresponding a nominal rate of 7% p.a. convertible quarterly.
a. 7% b. 7.5%
c. 5% d. 7.18%

PYQ Dec 22

(61) ★ A machine worth ₹ 4,90,740 is depreciated at 15% on its opening value each year. When would its value reduce to ₹ 2,00,750?
a. 5 years 5 months
b. 5 years 6 months
c. 5 years 7 months
d. 5 years 8 months

PYQ Dec 22

(62) If ₹ 64 amount to ₹ 83.20 in 2 years, what will ₹86 amount to in 4 years at the same Rate percent per annum?
a. ₹ 127.60 b. ₹ 147.60
c. ₹ 145.34 d. ₹ 117.60

PYQ Dec 22

(63) A farmer borrowed ₹ 3,600 at the rate of 15% simple interest p.a. At the end of 4 years, he cleared this account by paying ₹4,000 and a cow. The cost of the cow is:
a. ₹ 1,000 b. ₹ 1,200
c. ₹ 1,550 d. ₹ 1,760

PYQ Dec 22

(64) The effective annual rate of interest corresponding to a normal rate of 6% per annum payable half yearly is:
a. 6.06% b. 6.07%
c. 6.08% d. 6.09%

PYQ Dec 22

(65) ★ Mr. Prakash invested money in two schemes 'A' and 'B' offering compound interest at the rate of 8% and 9% p.a. respectively. If the total amount of interest accrued through these two schemes together in two years was ₹4,818.30 and total amount invested was ₹27,000. What was the amount invested in schemes 'A'?
a. ₹ 12,000 b. ₹ 12,500
c. ₹ 13,000 d. ₹ 13,500

PYQ Dec 22

(66) ★ A sum of money invested of compound interest double itself in four years. In how many years it become 32 times of itself at the same rate of compound interest?
a. 12 years b. 16 years
c. 20 years d. 24 years

PYQ Dec 22

(67) The difference between compound interest and simple interest on an amount of ₹ 15,000 for 2 years is ₹ 96. What is the rate of interest p.a.?
a. 9% b. 8%
c. 10% d. 11%

PYQ Dec 22

(68) A sum of money doubles itself in 4 years at certain compound interest rate. In how many years this sum will become 8 times at the same compound interest rate?
a. 12 years b. 14 years
c. 16 years d. 18 years

PYQ Jun 23

(69) Mr. Ram invested a total of ₹ 1,00,000 in two different banks for a fixed period. The first bank yields an interest of 9% p.a. and second, 11% per annum. If the total interest at the end of one year is 9.75% p.a., there the amount invested in these banks are respectively:
a. ₹ 52,500, ₹47,500
b. ₹ 62,500, ₹ 37,500
c. ₹ 57,500, ₹ 42,500
d. ₹ 67,500, ₹ 32,500

PYQ Jun 23

(70) The nominal rate of interest is 10% per annum. The interest is compounded quarterly. The effective rate of interest per annum will be:
a. 10% b. 10.10%
c. 10.25% d. 10.38%

PYQ Jun 23

(71) The difference between compound interest and simple interest on a certain sum of money invested for 3 years at 6% per annum is ₹110.16. The principal is

a. ₹ 3,000 b. ₹ 3,700
c. ₹ 12,000 d. ₹ 10,000

PYQ Jun 23

(72) A machine depreciates 10% of its value at the beginning of the year. The cost and scrap value realized at the time of sale being ₹ 23,240 and ₹ 9,000 respectively. Approximately, for how many years the machine is put to use?

a. 7 b. 8
c. 9 d. 10

PYQ Jun 23

(73) The population of a town increases every year by 2% of the population at the beginning of that year. The approximate number of years, by which the total increase of population will be 40%, is (Given $1.02^8 = 1.17166$)

a. 15 b. 17
c. 19 d. 20

PYQ Jun 23

(74) The compound interest on ₹ 15,625 for 9 months at 16% per annum compounded quarterly is:

a. ₹ 1,851 b. ₹ 1,941
c. ₹ 1,951 d. ₹ 1,961

PYQ Jun 23

(75) Jonny wants to have ₹ 2,00,000 in his saving account after three year. The rate of interest offered by bank is 8% per annum compounded annually. How much should he invest today to achieve his target amount?

a. ₹ 1,47,489.10 b. ₹ 1,58,766.44
c. ₹ 1,71,035.59 d. ₹ 1,84,417.96

PYQ Jun 23

(76) Jonny wants to have ₹ 2,00,000 in his saving account after three year. The rate of interest offered by bank is 8% per annum compounded annually. How much should he invest today to achieve his target amount?

a. ₹ 1,47,489.10 b. ₹ 1,58,766.44
c. ₹ 1,71,035.59 d. ₹ 1,84,417.96

PYQ Dec 23

(77) What is the effective rate of interest when principal amount ₹ 50,000 deposited in a nationalized bank for one year, corresponding to a nominal rate interest 8% per annum compounded quarterly [$(1.02)^4 = 1.0824$]

a. 10.38% b. 8.08%
c. 8.16% d. 8.24%

PYQ Dec 23

(78) Manoj invests ₹ 12,000 at 6% per annum simple interest to obtain a total amount of ₹14,880. What is the time for which the amount was invested?

a. 3 years b. 4 years
c. 2 years d. 5 years

PYQ Dec 23

(79) Mr. X makes a deposit of ₹ 50,000 in the bank for a period 2.5 years. If the rate of interest is 12% per annum compounded half yearly, then the maturity value of the money deposited by Mr. X is: (where $(1.06)^5 = 1.3382$)

a. ₹ 66,910 b. ₹ 66,123
c. ₹ 67,925 d. ₹ 65,550

PYQ Dec 23

(80) A machine costing ₹1,00,000 has useful life of 10 years. If the rate of depreciation is 12% what is scrap value of the machine at the end of life? Given $(0.88)^{10} = 0.27850$

a. ₹ 25,850 b. ₹ 26,850
c. ₹ 27,850 d. ₹ 28,850

PYQ Dec 23

(81) Compute the compound interest on ₹ 6,000 for 1.25 years at 8% per annum. Interest will be compounded quarterly

a. 642 b. 630.78
c. 634.68 d. 624.48

PYQ Dec 23

(82) The population of a city increases at the rate of 5% every year. What will be the population of the city in the year 2023, if its population in 2021 was 1,00,000?

a. 1,05,500 b. 1,10,250
c. 1,15,240 d. 1,20,550

PYQ Dec 23

(83) Mr. XYZ invested ₹ 60,000 in a nationalized bank in the form of fixed deposit at the rate of 7.5% per annum simple interest rate. He received ₹ 73,500 after the end of the term of fixed deposit. Calculate the period for which ₹ 60,000 was invested in fixed deposit.

a. 3 years b. 3.5 years
c. 4 years d. 4.5 years

PYQ June 24

(84) An amount ₹ 4,500 becomes ₹ 7,200 in two years at a simple interest rate of :

a. 15% b. 25%
c. 30% d. 40%

PYQ June 24

(85) The difference between the compound interest amount and the simple interest amount for a period of two years, at same interest rate r is

a. $P \times r^2$ b. $P \times \frac{r}{2}$
c. $P \times 2 \times r$ d. $P^2 \times r$

PYQ June 24

(86) If the interest rate on a loan is 1% per month, the effective annual rate of interest is:

a. 12% b. 12.36%
c. 12.68% d. 12.84%

PYQ June 24

(87) Ram borrowed ₹ 5,000 at 12.5% per annum compound interest. The money was repaid after 3 years. The total interest paid by him approximately is [$(1+0.125)^3 = 1.4238$]

a. ₹ 2,119 b. ₹ 2,200
c. ₹ 2,000 d. ₹ 2,500

PYQ June 24

(88) Find the effective rate of interest if an amount of ₹ 40,000 deposited in a bank for 1 year at the rate of 10% compounded semi-annually

a. 10.20% b. 10.05%
c. 10.25% d. 10.10%

PYQ Sep 24

(89) The value of a machine depreciates every year at the rate of 10% per annum, on its value at the beginning of that year, if the present value of the machine is ₹ 72,900, then machine's worth 3 years ago was:

a. ₹ 80,000 b. ₹ 94,710
c. ₹ 1,00,000 d. ₹ 75,087

PYQ Sep 24

(90) What is the effective rate of interest when principal amount of ₹ 50,000 deposited in a nationalized bank for one year, corresponding to a nominal rate of interest 6% per annum payable half yearly?

a. 6.07% b. 6.06%
c. 6.08% d. 6.09%

PYQ Sep 24

(91) Kanta wants to accumulate ₹ 4,91, 300 in her savings account after three years. The rate of interest offered by bank is $6\frac{1}{4}$% per annum compounded annually. How much amount should she invest today to achieve her target amount?

a. ₹ 4,37,500 b. ₹ 4,09,600
c. ₹ 46,900 d. ₹ 49,600

PYQ Sep 24

(92) The sum required to earn a monthly interest of ₹ 1,200 at 18% per annum simple interest is:

a. ₹ 60,000 b. ₹ 50,000
c. ₹ 80,000 d. ₹ 66,000

PYQ Sep 24

(93) The compound interest on ₹ 40,000 at 12% per annum compounded quarterly for 6 months is:

a. ₹ 2,463 b. ₹ 2,643
c. ₹ 2,364 d. ₹ 2,436

PYQ Sep 24

(94) At a certain rate of interest per annum, the difference between the compound interest and simple interest on ₹ 3,00,000 for two years is ₹ 480, then the rate of interest per annum is:

a. 4% b. 2%
c. 6% d. 8%

PYQ Sep 24

(95) Mr. X makes a deposit of ₹ 12,000 in a bank where the amount doubles at compound interest in 5 years, then what will be the total amount he will have after twenty years?

a. ₹ 1,20,000 b. ₹ 96,000
c. ₹ 1,24,000 d. ₹ 1,92,000

Answer Key

1	a	2	a	3	b
4	a	5	a	6	a
7	b	8	b	9	a
10	c	11	a	12	d
13	a	14	b	15	b

16	c	17	c	18	a
19	a	20	b	21	b
22	b	23	a	24	a
25	a	26	a	27	a
28	a	29	a	30	a
31	a	32	b	33	a
34	b	35	c	36	b
37	c	38	d	39	b
40	c	41	b	42	a
43	a	44	d	45	c
46	c	47	b	48	b
49	b	50	d	51	b
52	a	53	b	54	c
55	b	56	c	57	a
58	c	59	b	60	d
61	b	62	c	63	d
64	d	65	a	66	c
67	b	68	a	69	b
70	d	71	d	72	c
73	b	74	c	75	b
76	b	77	d	78	b
79	a	80	c	81	d
82	b	83	a	84	c
85	a	86	c	87	a
88	c	89	c	90	d
91	b	92	c	93	d
94	a	95	d		

Simple Interest and Compound Interest

MTP May 18

(1) Nominal rate of Interest 9.9% p.a. If Interest is compounded monthly. What will be the effective rate of Interest? (Given $\left(\frac{4033}{4000}\right)^{12} = 1.1036$)

a. 10.36% b. 9.36%
c. 11.36% d. 9.9%

MTP May 18

(2) A machine worth of ₹ 4,90,740 is depreciated at 15% on its opening value each year. When its value reduce to ₹ 2,00,000

a. 5 years 6 months
b. 5 years 7 months
c. 5 years 5 months
d. None of these

MTP May 18

(3) A sum of money doubles itself at compound interest in 10 years. In how many years will it become eight times

a. 10 b. 30
c. 40 d. 35

MTP May 18

(4) The time in which a sum of money will be doubled at 6% compound interest compounded interest compounded interest compounded annually approximately.

a. 10 years b. 12 years
c. 13 years d. 14 years

MTP Nov 18

(5) A lent ₹ 6000 to B for 2 years and 1500 to C for 4 years and received total interest of ₹ 900 from both. The rate of interest when simple interest method calculated.

a. 5% b. 6%
c. 7.5% d. 9%

MTP Nov 18

(6) If the difference between the interests received from two different banks on ₹ 5000 for 2 years is ₹ 50 then the difference between this rates.

a. 0.25% b. 0.40%
c. 0.50% d. 0.75%

MTP Nov 18

(7) ★ The simple interest of P % for P years will be ₹ P on a sum of :

a. $₹ \frac{p}{100}$

b. $₹ \frac{100}{p}$

c. $₹ \left(\frac{p}{100}+1\right)$

d. $₹ \left(\frac{100}{p}-1\right)$

MTP Nov 18

(8) ★ The compound interest on a certain sum is ₹ 209 simple interest is ₹ 200 for 2 years. What is the rate per cent for 2 years?

a. 9% b. 18%
c. 4.5% d. 10%

MTP Nov 18

(9) The value of a machine depreciates 12% annually. If the present value of ₹ 68,150 then its value in 3 years ago was.

a. ₹ 1,10,000 b. ₹ 1,00,004
c. ₹ 92,000 d. ₹ 97,000

MTP Nov 18

(10) What principal will amount to ₹ 370 in 6 years at 8% p.a. at simple interest

a. ₹ 210 b. ₹ 250
c. ₹ 310 d. ₹ 310

MTP Nov 18

(11) The effective rate of interest is an amount ₹25,000 is deposited in a bank for one year at value of 6% per annum compounded semi-annually is

a. 5.99% b. 5.95%
c. 6.09% d. 6.90%

MTP Nov 18

(12) A Sum of money doubles itself in 10 years. The number of years it would be trebled itself is:

a. 25 years b. 15 years
c. 20 years d. None of these

MTP May 19

(13) A certain money doubles itself in 10 years when deposited on simple interest. It would triple itself in

a. 30 years b. 20 years
c. 25 years d. 15 years

MTP May 19

(14) A man deposited ₹ 8,000 in a bank for 3 years at 5% per annum compound interest, after 3 years he will get

a. ₹ 9000 b. ₹ 8800
c. ₹ 9200 d. ₹ 9261

MTP May 19

(15) The effective rate of interest for one year corresponding to a nominal at 7% rate of interest per annum convertible quarterly is

a. 7% b. 7.02%
c. 8% d. 7.18 %

MTP May 19

(16) The population of a town increases every year by 2 % of the population beginning of that year. The number of years by which the total increase of population be 40% is

a. 7 years b. 10 years
c. 17 years (apx.) d. None of these

MTP May 19, ICAI SM

(17) The annual birth rates per 1,000 are 39.4 and 19.4 respectively. The number of years which the population will be doubled assuming there is no immigration or emigration is

a. 35 years b. 30 years
c. 25 years d. none of these

MTP May 19 Series II

(18) ₹ 10,000 is invested at annual rate of interest of 10% p.a. The amount after two years at annual compounding is

a. ₹ 21100 b. ₹ 12100
c. ₹ 12110 d. None of these

MTP May 19 Series II

(19) The annual birth rate and death rate per 1000 are 39.4 and 19.4 respectively. The number of years in which population will be doubled assuming that there is no immigration or emigration is approximately

a. 40 Years b. 30 years
c. 35 Years d. 25 years

MTP May 19 Series II

(20) If the effective rate of interest is 11% per annum and the interest is compounded quarterly, the nominal rate of interest per annum

a. 11.78 % b. 11.21 %
c. 11.89% c d. 11.49 %

MTP May 19 Series II, ICAI SM

(21) The difference between CI and SI on a certain money invested for three years at 6% per annum is ₹ 110.16. The sum is

a. ₹ 3000 b. ₹ 3700
c. ₹ 12000 d. ₹ 10000

MTP May 19 Series II

(22) Simple interest on ₹ 3500 for 3 years at 12% per annum is

a. ₹ 1200 b. ₹ 1260
c. ₹ 2260 d. ₹ 2000

MTP Nov 19

(23) ₹ 1000 is invested at annual rate of interest of 10% p.a. The amount after two years if compounding is done annually is _____.

a. ₹ 121 b. ₹ 1210
c. ₹ 2110 d. None of these

MTP Nov 19

(24) If A person invests ₹ 3,000 in a three years' investment that pays you 12% per annum. Calculate the future value of the investment.

a. ₹ 4214.78 b. ₹ 4124.78
c. ₹ 4324.48 d. ₹ 4526.48

MTP Nov 19

(25) ★ A person deposited a sum of ₹ 10,000 in a bank. After 2 years, he withdrew ₹ 4,000 and at the end of 5 years, he received an amount of ₹ 7,900; then the rate of simple interest is:

a. 6% b. 5%
c. 10% d. None of these

MTP Nov 19

(26) ★ A trust fund has invested ₹ 30,000 in two different types of bonds which pays 5% and 7% interest respectively. Determine how much amount is invested in second type of bond if trust obtains an annual total interest of ₹ 1600.

a. ₹ 5000 b. ₹ 6000
c. ₹ 7000 d. ₹ 8000

MTP Nov 19

(27) ★ At six months intervals A deposited ₹ 1000 in a savings account which credit interest at 10% p.a., compounded semi-annually. The first deposit was made when A's son was 6 months old and last deposit was made when his son was 8 years old. The money remained in the account and was given to the son on his 10th birthday. How much did he receive? $(1.05)^{16} = 2.1829$

a. ₹ 25740 b. ₹ 28755
c. ₹ 27860 d. ₹ 29760

MTP Nov 19

(28) What is the effective rate of interest if the nominal rate 5 % p.a converted quarterly?

a. 6.09 % b. 5.09 %
c. 5.55% d. 5.60 %

MTP Nov 19

(29) A sum of money doubles itself at compound interest in 10 years. In how many years will it become eight times?

a. 20 b. 30
c. 40 d. 35

MTP Nov 19

(30) Certain sum of money borrowed at simple interest amount to Rs.2688 in three years and to ₹ 2784 in four years at the rate p.a. equal to.

a. 7% b. 6%
c. 5% d. 4%

MTP May 20

(31) A sum of ₹ 46,875 was lent out at simple interest and at the end of 1 year 8months the total amount was ₹ 50,000. Find the rate of interest percent per annum.

a. 5% b. 6%
c. 4% d. 8%

MTP May 20

(32) A = ₹ 5,200, R = 5% p.a., T = 6 years, P will be

a. ₹ 2,000 b. ₹ 3,880
c. ₹ 3,000 d. none of these

MTP May 20

(33) The time by which a sum of money would treble itself at 8% p. a C. I is

a. 14.28 years b. 14 years
c. 12 years d. none of these.

MTP May 20

(34) A machine depreciates at 10% of its value at the beginning of a year. The cost and scrap value realized at the time of sale being ₹ 23,240 and ₹9,000 respectively. For how many years the machine was put to use?

a. 7 years b. 8 years
c. 9 years d. 10 years

MTP May 20

(35) The compound interest on half-yearly rests on ₹ 10,000 the rate for the first and second years being 6% and for the third year 9% p.a. is

a. ₹ 2,200 b. ₹ 2,287
c. ₹ 2,285 d. ₹ 2290.84

MTP May 20

(36) The effective rate of interest corresponding to a nominal rate 3% p.a payable half yearly is

a. 3.2% p.a b. 3.25% p.a
c. 3.0225% p.a d. none of these

MTP Nov 20

(37) A sum of money triples itself in 18 years under simple interest. what is the rate of interest p.a.?

a. 9% b. 9.09%
c. 11.11% d. 13%

MTP Nov 20

(38) What time will be required for a sum of money to double itself at 8 % Simple interest?

a. 8 years b. 8.5 years
c. 12.5 years d. 12 years

MTP Nov 20

(39) The difference between simple interest and compound interest on a sum of ₹ 6,00,000 for two years is ₹ 6000. What is the annual rate of interest?

a. 8% b. 10%
c. 6% d. 12%

MTP Nov 20

(40) What is the sum of money will amount to ₹11035.50 in four years at compound interest for 1st, 2nd , 3rd and 4th years being 4% , 3% , 2% and 1% respectively.

a. ₹ 10,000 b. ₹ 11,000
c. ₹ 1035 d. ₹ 11,305

MTP Nov 20

(41) A Machine was purchased for ₹ 10,000. Its rate of depreciation is 10% in the first year and 5 % per annum afterwards. Find the depreciated value of Machine after 7 years of purchase

a. ₹ 6606 b. ₹ 6616
c. ₹ 6660 d. ₹ 6661

MTP Nov 20

(42) The effective rate of interest for one-year deposit corresponding to a nominal 7 % rate of interest per annum convertible quarterly is

a. 7% b. 7.5%
c. 7.4% d. 7.18%

MTP Nov 20/ RTP Sep 24

(43) What will be the population after three years when present population is ₹25,000 and population increases at the rate of 3 % in first year, 4 % in second year and 5 % in third year?

a. 28119 b. 29118
c. 27000 d. 30000

MTP Nov 20

(44) SI = 0.125 P at 10% p.a find the time

a. 1.25 years b. 25 years
c. 0.25 years d. None of these

MTP March 21

(45) ₹ 8,000 becomes ₹ 10,000 in two years at simple interest. The amount that will become ₹ 6,875 in 3 years at the same rate of interest is:

a. ₹ 4850 b. ₹ 5000
c. ₹ 5500 d. ₹ 5275

MTP March 21

(46) The difference between the simple and compound interest on a certain sum for 3 year at 5% p.a. is ₹ 228.75. The compound interest on the sum for 2 years at 5% p.a. is:

a. ₹ 3175 b. ₹ 3075
c. ₹ 3275 d. ₹ 2975

MTP March 21

(47) A sum of money doubles itself in 10 years. The number of years it would treble itself is:

a. 25 years b. 15 years
c. 20 years d. None of these

MTP March 21

(48) The effective rate equivalent to nominal rate of 6% compounded monthly is:

a. 6.05 b. 6.17
c. 6.26 d. 6.07

MTP March 21

(49) A person borrows ₹ 5,000 for 2 years at 4% p.a. simple interest. He immediately lends to another person at 6.25%p.a. for 2 years. Find his gain in the transaction per year:

a. ₹ 112.50 b. ₹ 125
c. ₹ 225 d. ₹ 167.50

MTP March 21

(50) The cost of machinery is ₹ 1,25,000/- if its useful life is estimated to be 20 years and the rate of depreciation of its cost is 10% p.a., then the scrap value of the Machinery is

a. 15,197 b. 15,400
c. 15,300 d. 15,250

MTP March 21

(51) If A person invests ₹ 5,000 in a three years' investment that pays you 12% per annum. Calculate the future value of the investment.

a. ₹ 7024.64 b. ₹ 7124.78
c. ₹ 7324.48 d. ₹ 7526.48

MTP Apr 21

(52) Two equal sums were lent out at 7% and 5% simple interest respectively. The interest earned on the two loans adds up to ₹ 960 for four years. Find the total sum lent out.

a. ₹ 4000 b. ₹ 3000
c. ₹ 5000 d. ₹ 6000

MTP Apr 21

(53) A sum of money amounts to Rs. 20,800 in 5 years and ₹ 22720 in 7 years. Find the principle and rate of interest.

a. ₹ 5000, 6% b. ₹ 16000, 6%
c. ₹ 80000, 8% d. ₹ 10000, 10%

MTP Apr 21, ICAI SM

(54) The annual birth and death rates per 1000 are 39.4 and 19.4 respectively. The number of years in which the population will doubled assuming there is no immigration or emigration is:

a. 35 years b. 30 years
c. 25 years d. None of these

MTP Apr 21

(55) The effective annual rate of interest corresponding to nominal rate 6% p.a. payable half yearly is

a. 6.06 b. 6.07
c. 6.08 d. 6.09

MTP Apr 21

(56) The cost of machinery Rs.1,25,000 if its useful life estimated to the 20 years and the rate of depreciation of its cost is 10% p.a . Then scrap value of machinery is

a. Rs. 15,187 b. Rs. 15,400
c. Rs. 15,300 d. Rs. 15,250

MTP Apr 21

(57) ☆ If a SI on a sum of money at 6% p.a for 7 years is equal to twice of simple interest on another sum for 9 years at 5% p.a. The ratio will be

a. 2:15 b. 7:15
c. 15:7 d. 1:7

MTP Apr 21

(58) In what will be a sum of money double itself at 6.25% p.a Simple interest?

a. 5 years b. 8 years
c. 12 years d. 16 years

MTP Apr 21

(59) What will be population after 3 years when present population is 25,000 and population increase at the rate of 3% in first year , at 4% in second year and at 5 % in third year ?

a. 28,119 b. 29,118
c. 30,100 d. 27,100

MTP Apr 21

(60) A sum amount to Rs. 1331 at a principal of Rs.1000 at 10% CI. Find the time

a. 3.31 years b. 4 years
c. 3 years d. 2 years

MTP Nov 21

(61) The sum of money doubles itself in 10 years. The number of years it would be treble itself is:

a. 25 years b. 15 years
c. 20 years d. None of these

MTP Nov 21

(62) ☆ Arun purchased a vaccum cleaner by giving ₹1700 as cash down payment, which will be followed by five EMIs of ₹480 each. The vaccum cleaner can also be bought by paying ₹3900 cash. What is the approx. rate of interest p.a. (at simple interest) under this instalment plan?

a. 18% b. 19%
c. 22% d. 20%

MTP Nov 21

(63) If a sum triples itself in 15 years at simple rat of interest, the rate of interest per annum will

a. 13% b. 13.3%
c. 13.5% d. 18.0%

MTP Nov 21

(64) What will be population after 3 years when present population is 25, 000 and population increases at the rate of 3% in I year, at 4% in II year and 5% in III year?

a. Rs.28,119 b. Rs.29,118
c. Rs.27,000 d. Rs.30,000

MTP Nov 21

(65) He effective rate of interest equivalent to the nominal rate of 7% converted monthly:

a. 7.26% b. 7.22%
c. 7.02% d. 7.20%

MTP Nov 21

(66) How much will be Rs.25,000 to in 2 years at compound interest if the rates for the successive years are at 4% and 5% per year

a. Rs.27,300 b. Rs.27,000
c. Rs.27,500 d. Rs.27,900

MTP Oct 21

(67) A sum of ₹ 46,875 was lent out at simple interest and at the end of 1 year 8 months, the total amount was ₹ 50,000. Find the rate of interest per annum.

a. 8% b. 4%
c. 12% d. None

MTP Oct 21, ICAI SM

(68) A sum of money amount to ₹ 6,200 in 2 years and ₹ 7,400 in 3 years. The principal and rate

a. ₹ 3,800, 31.57% b. ₹3,000, 20%
c. ₹3,500, 15% d. none of these

MTP Oct 21

(69) The effective rate of interest corresponding to a nominal rate 3% p.a payable half yearly is

a. 3.2% p.a b. 3.25% p.a
c. 3.0225% p.a d. none of these

MTP Oct 21

(70) ☆ 1A sum of money gets doubled in 5 years at X% simple interest. If the interest was Y%, the sum of money would have become ten-fold in thirty years. What is Y – X (in %)

a. 10 b. 5
c. 8 d. none of these

MTP Oct 21

(71) The difference between Compound Interest and Simple Interest on a certain sum for 2 years at 6% p.a. is ₹ 13.50. Find the sum

a. 3750 b. 2750
c. 4750 d. none of these

MTP Oct 21, ICAI SM

(72) The sum required to earn a monthly interest of Rs 1200 at 18% per annum Simple Interest is

a. ₹ 50,000 b. ₹ 60,000
c. ₹ 80,000 d. none of these

MTP Oct 21

(73) The compound interest earned by a money lender on ₹ 7,000 for 3 years if the rate of interest for 3 years are 7%, 8% and 8.5% is

a. ₹ 1750 b. ₹ 1800
c. ₹ 1776 d. none of these

MTP Oct 21

(74) A Maruti Zen cost ₹3,60,000. Its price depreciates at the rate of 10% of a year during the first two years and at the rate of 20% in third year. Also find the total depreciation.

a. ₹ 1,26,720 b. ₹ 1,15,620
c. ₹ 1,25,000 d. ₹1,10,520

MTP March 22

(75) In what time will be a sum of money doubles itself at 6.25% p.a simple interest?

a. 5 years b. 8 years
c. 12 years d. 16 years

MTP March 22

(76) The difference between the simple and compound interest on a certain of 3 years at 5% p.a is ₹₹ 228.75. The compound interest on the sum of for 2 years at 5% per annum is

a. ₹3175 b. ₹3075
c. ₹3275 d. ₹2975

MTP March 22

(77) How much time would the SI on a certain sum be 0.125 times the principal at 10% p.a.

a. 1.25 years b. 1.75 years
c. 2.25 years d. 2.75 years

MTP March 22

(78) The time in by which a sum of money is 8 times of itself if it doubles itself in 15 years interest compounded annually.

a. 42 years b. 43 years
c. 45 years d. 46 years

MTP March 22

(79) Present value of a scooter is ₹7290, if its value decreases every year by 10% then the value before 3 years is equal to

a. 10,000 b. 10,500
c. 20,000 d. 20,500

MTP March 22

(80) Find the effective rate of interest at 10% p.a when the interest is payable quarterly.

a. 10.38% b. 5%
c. 5.04% d. 4%

MTP March 22

(81) The difference between in simple interest on a sum invested of ₹1500 for 3 years is ₹18. The difference in their rate is

a. 0.4 b. 0.6
c. 0.8 d. 0.10

MTP March 22

(82) What will be the population after 3 years when present population is 25000, if the population increases at the rate 3 % in I year, 4 % in II year and 5% in III year.

a. 28,119 b. 29,118
c. 27,000 d. 30,000

MTP March 22/ RTP Sep 24

(83) If ₹10,000 is invested at 8 % per annum, then compounded quarterly. Then value of investment after 2 years is

a. ₹ 11,716.59 b. ₹ 10,716.59
c. ₹ 12,715.59 d. none of these

MTP March 22/ RTP Sep 24

(84) In how many years will a sum of money become double at 5% p.a compound interest

a. 14 years b. 15 years
c. 16 years d. 14.3 years

MTP June 22

(85) Find the effective rate of interest if an amount of 30,000 deposited in a bank. For 1 year at the rate of 10% p.a. compounded semi-annually.
a. 10.05% b. 10.10%
c. 10.20% d. 10.25%

MTP June 22

(86) The present population of a town is 25,000. If it grows at the rate of 4%, 5%, 8% during 1st year, 2nd year, 3rd year respectively. Then find the population after 3 years.
a. 29,484 b. 29,844
c. 29,448 d. 28,944

MTP June 22

(87) The present value of a scooter is ₹ 7290. The rate of depreciation is 10%. What was its value 3 years ago?
a. 10000 b. 10010
c. 9990 d. 12000

MTP June 22

(88) ★ The rate of interest for the first 2 year is 3% per annum, for next 3 years is 8% per annum and for the period beyond 5 years, 10% per annum. If a man gets ₹ 1520 as a simple interest for 6 years; how much money did he deposit?
a. ₹ 3800 b. ₹ 3800
c. ₹ 4000 d. None of these

MTP June 22

(89) The difference between simple interest and compound interest on a certain for 2 years at 10% p.a . is ₹ 10. Find the Sum
a. ₹ 1010 b. ₹ 1095
c. ₹ 1000 d. ₹ 990

MTP June 22

(90) In how many years will a sum of money becomes four times at 12% p.a. simple interest?
a. 18 years b. 21 years
c. 25 years d. 28 years

MTP June 22

(91) The effective rate of interest does not depend on
a. Amount of Principal
b. Amount of Interest
c. Number of Conversion periods
d. None of these

MTP June 22

(92) Find the effective rate of interest at 10% p.a. When interest is payable quarterly.
a. 10.38% b. 5%
c. 5.04% d. 4%

MTP June 22

(93) In simple interest if the principle is ₹ 2,000 and the rate and time are roots of the equation $x^2 - 11x + 30 = 0$
a. ₹ 500 b. ₹ 600
c. ₹ 700 d. ₹ 800

MTP Dec 22 – Series I

(94) Rajesh deposits ₹ 3,000 at the start of each quarter in his savings account. If the account earns interest of 5.75% per annum compounded quarterly, how much money (in ₹) will he have at the end of 4 years? [Given that $(1.014375)^{16} = 1.25654$]
a. ₹ 5430.86 b. ₹ 58553.6
c. ₹ 68353.6 d. ₹ 63624.4

MTP Dec 22 – Series I

(95) The annual rate of simple interest is 12.5%. In how many years does principal doubles?
a. 11 years b. 9 years
c. 8 years d. 7 years

MTP Dec 22 – Series I

(96) Certain sum of money borrowed at simple interest to ₹ 2688 in three years and to ₹ 2784 in four years at the rate per annum equal to -
a. 4% b. 6%
c. 5% d. 7%

MTP Dec 22 – Series I

(97) ☆ An investment is earning compounded interest ₹ 100 invested in the year 2 accumulated to ₹ 105 by year 4. If ₹ 500 is invested in the year 5, will become ₹ _____by year 10.
a. ₹ 364.80 b. ₹ 564.80
c. ₹ 464.80 d. ₹ 664.80

MTP Dec 22 – Series I

(98) An investor is saving to pay off an obligation of ₹ 15,250 which will due in seven years, if the investor is earning 7.5% simple interest rate p.a., he must deposit to meet the obligation.
a. ₹ 8000 b. ₹ 9000
c. ₹ 10000 d. ₹ 11000

MTP Dec 22 – Series I

(99) The value of the scooter is ₹ 1,00,000 find its depreciation is 10% p.a. Calculate depreciable value (WDV) at the end of seven years.
a. ₹ 47829.70 b. ₹ 47000.90
c. ₹ 42709 d. ₹ 42,000

MTP Dec 22 – Series I

(100) Effective rate of interest does not depend on
a. Amount of Principal
b. Amount of Interest
c. Number of conversion periods
d. none of these

MTP Dec 22 Series II

(101) A man invests ₹12,000 at 10% p.a. and another sum of money at 20% p.a for one year. The total investment earns at 14% p.a. simple interest the total investment is:
a. ₹ 8000 b. ₹ 20000
c. ₹ 14000 d. ₹ 16000

MTP Dec 22 Series II

(102) The difference in simple interest of a sum invested of ₹ 1,500 for 3 years is ₹ 18. The difference in their rates is:
a. 0.4 b. 0.6
c. 0.8 d. 0.10

MTP Dec 22 Series II

(103) Find the effective rate of interest on ₹10,000 on which CI is payable half yearly at 5% p.a.
a. 5.06% b. 4%
c. 0.4% d. 3%

MTP Dec 22 Series II

(104) Find the effective rate of interest at 10% p.a. when interest is payable quarterly.
a. 10.38% b. 5%
c. 5.04% d. 4%

MTP Dec 22 Series II

(105) What will be the population after 3 years when the present population is 25,000 & population increases at the rate of 3% in 1st year, at 4% in, 2nd year and at 5% in 3rd year?
a. 28,119 b. 29,118
c. 27,000 d. 30,000

MTP Dec 22 Series II

(106) The value of scooter is ₹ 10,000. Find its value after 7 years if rate of depreciation is 10% p.a.
a. ₹ 4,782.96 b. ₹ 4,278.69
c. ₹ 42,079 d. ₹ 42,000

MTP Dec 22 Series II

(107) The difference between the CI and SI for 2 years is 21. If the rate of interest is 5%, the final principal is:
a. ₹ 8,200 b. ₹ 4,800
c. ₹ 8,000 d. ₹ 8,400

MTP Dec 22 Series II

(108) ★ Mr. X lent some amount of money at 4% S.I. and he obtained ₹ 520 less than he lent in 5 years. The sum lent is
a. ₹ 620 b. ₹ 650
c. ₹ 750 d. none of these

MTP Dec 22 Series II

(109) ☆ ₹ 8,829 is invested into three different sectors in such a way that their amounts at 4% p.a. S.I. after 5 years; 6 and 8 years are equal. Find each part of the sum.
a. ₹ 3,069, ₹ 2,970; ₹ 2,790
b. ₹ 3,089, ₹ 2,970; ₹ 2,790
c. ₹ 3,609, ₹ 2,970; ₹ 2,790
d. ₹ 3,069, ₹ 2,960; ₹ 2,760

MTP Jun 23 Series I

(110) ₹ 80,000 is invested to earn a monthly interest of ₹ 1200 at the rate of _____p.a. SI
a. 12% b. 14%
c. 16% d. 18%

MTP Jun 23 Series I

(111) The effective annual rate of interest corresponding to a normal rate of 6% per annum payable half yearly is:
a. 6.06% b. 6.07%
c. 6.08% d. 6.09%

MTP Jun 23 Series I

(112) A trust fund has invested ₹ 27000 money in two schemes 'A' and 'B' offering compound interest at the rate of 8% and 9% per annum respectively. If the total amount of interest accrued through these two schemes together in two years was ₹ 4818.30. What was the amount invested in schemes 'A'?
a. ₹ 12,000 b. ₹ 12,500
c. ₹ 13,000 d. ₹ 12,500

MTP Jun 23 Series I

(113) A sum of money invested of compound interest double itself in four years. In how many years it become 32 times of itself at the same rate of compound interest.
a. 12 years b. 16 years
c. 20 years d. 18 years

MTP Jun 23 Series I

(114) The difference between compound interest and simple interest on an amount of ₹ 15,000 for 2 years is ₹ 96. What is the rate of interest per annum?

a. 9% b. 8%
c. 11% d. 10%

MTP Jun 23 Series II

(115) ☆ Mr. A invested ₹ x in an organization, it amounts to ₹ 150 at 5% p.a. S.I. and to ₹ 100 at 3% p.a. S.I. Then the value of x is
a. ₹ 70 b. ₹ 40
c. ₹ 25 d. None of these

MTP Jun 23 Series II

(116) Mrs. Sudha lent ₹ 4,000 in such a way that some amount to Mr. A at 3% p.a. S.I. and rest amount to B at 5% p.a. S.I., the annual interest from both is ₹ 144, Find the amount lent to Mr. A
a. ₹ 2,800 b. ₹ 1,200
c. ₹ 2,500 d. None of these

MTP Jun 23 Series II

(117) A certain sum of money becomes double at 5% rate of S.I. p.a. in a certain time, the time in years is
a. 10 years b. 20 years
c. 25 years d. None of these

MTP Jun 23 Series II

(118) A certain sum of money amounts to ₹ 5,000 in 5 years at 10% p.a. In how many years will it amount to ₹ 6,000 at same rate of S.I p.a.
a. 10 years b. 8 years
c. 6 years d. None of these

MTP Jun 23 Series II

(119) ₹ 1,25,000 is borrowed at compound interest at the rate of 2% for the 1st year, 3% for the second year and 4% for the 3rd year. Find the amount to be paid after 3 years
a. ₹ 125678 b. ₹ 136587
c. ₹ 163578 d. ₹ 136578

MTP Jun 23 Series II

(120) A certain sum of money amounts to double in 5 years placed at a compound interest. In how many years will it amount to 16 times at same rate of interest?
a. 12 years b. 20 years
c. 24 years d. None of these

MTP Jun 23 Series II

(121) If the compound interest on a certain sum of money for 3 years at 5% p.a. be ₹ 50.44, then the simple interest (S.I) is
a. ₹ 50 b. ₹ 49
c. ₹ 48 d. None of these

MTP Jun 23 Series II

(122) If the difference between C.I and S.I on a certain sum of money at 5% p.a. for 2 years is ₹ 1.50. Find the sum of money
a. ₹ 600 b. ₹ 500
c. ₹ 400 d. None of these

MTP Dec 23 Series I

(123) The amount charged for a defined length of time for uses of principal, generally on year basis is known as
a. Balance
b. Rate of Interest
c. Principal
d. Interest

MTP Dec 23 Series I

(124) The sum required to earn a monthly interest of Rs.1200 at 18% p.a Simple Interest is –
a. Rs. 50,000 b. Rs. 60,000
c. Rs. 80,000 d. None of these

MTP Dec 23 Series I

(125) Sachin deposited Rs.1,00,000 in his bank for 2 years at simple interest of 6%. How much interest would be he earns? How much final value of deposit
a. Rs.6,000, Rs, 1,06,000
b. Rs.15,000, Rs.1,15,000
c. Rs.11,600, Rs.1,11,600
d. Rs.1200, Rs,1,12,000

MTP Dec 23 Series I

(126) The ratio of principal and the compounded interest value for three years (Compounded annually) is 216:127. The rate of interest is
a. Rs. 50,000 b. Rs. 60,000
c. Rs. 80,000 d. None of these

MTP Dec 23 Series I

(127) The Compounded interest Rs.8000 for 6 months at 12% p.a payable quarterly is
a. Rs.487.20 b. Rs.480
c. Rs.380 d. None of these

MTP Dec 23 Series I

(128) The annual birth and death rates per 1,000 are 39.4 and 19.4 respectively. The number of years in which the population will be doubled assuming there is no immigration or emigration is
a. 35 years b. 30 years
c. 25 years d. None of these

MTP Dec 23 Series I

(129) The SI on sum of money at 6% p.a for 7 years is equal to twice of SI on another sum for 9 years at 5 p.a. The ratio will be
a. 2: 15 b. 7: 15
c. 15: 7 d. 1: 7

MTP Dec 23 Series I

(130) Nominal rate of Interest is 9.9% p.a. If interest is compounded monthly, what will be effective rate of Interest.
a. 10.36% b. 9.36%
c. 11.36% d. 9.9%

MTP Dec 23 Series I

(131) The population of a town increases by 2% of the population at the beginning of the year. The number of years by which the total increases in population would be 40% is
a. 7 years b. 10 years
c. 17 years d. 19 years

MTP Dec 23 Series I

(132) A sum of money invested in compounded interest doubles itself in four years. In how many years it becomes 32 times of itself as the same rate of compound interest?
a. 12 years b. 16 years
c. 20 years d. 24 years

MTP Dec 23 Series II

(133) The simple interest on ₹ 600 for 9 months is ₹27. Find the interest rate.
a. 6% b. 12%
c. 2.2 % d. None of these

MTP Dec 23 Series II

(134) Miss Liza lent ₹4,000 in such a way that some amount was given to Mr. A at 3% p.a. S.I. and rest amount to was given to B at 5% p.a. S.I., the annual interest from both is ₹ 144, Find the amount lent to Mr. A
a. ₹ 2,800 b. ₹ 1,200
c. ₹ 2,500 d. None of these

MTP Dec 23 Series II

(135) A certain sum of money was put at S.I. for 2.5 years at a certain rate of S.I. p.a. Had it been put at 4% higher rate, it would have fetched ₹ 500 more. Find the sum of money.
a. ₹ 4,000 b. ₹ 5,000
c. ₹ 6,000 d. None of these

MTP Dec 23 Series II

(136) ₹ 1,25,000 is borrowed at compound interest at the rate of 2% for the 1st year, 3% for the second year and 4% for the 3rd year. Find the amount to be paid after 3 years.
a. ₹ 125678 b. ₹ 136587
c. ₹ 163578 d. None of these

MTP Dec 23 Series II

(137) If the Compound Interest on a certain sum of money for 2 years at 4% p.a. be ₹510, then its simple Interest (S.I) of same time at same rate of interest is
a. ₹ 500 b. ₹ 510
c. ₹ 450 d. None of these

MTP Dec 23 Series II

(138) ☆ How long will it take for a principal to double if money is worth 12% compounded monthly?
a. 4.25 years. b. 5.81 years
c. 6 years d. None of these

MTP Dec 23 Series II

(139) The difference between compound interest and simple interest on a certain sum for 2 years @ 10% p.a. is ₹ 100. Find the sum:
a. ₹ 10,100 b. ₹ 10,950
c. ₹ 10,000 d. ₹ 9,900

MTP June 24 Series I

(140) If a simple interest on a sum of money at 6% p.a. for 7 years is equal to twice of simple interest on another sum for 9 years at 5% p.a. The ratio will be:
a. 2:15 b. 7:15
c. 15:7 d. 1:7

MTP June 24 Series I

(141) How much money is required to be invested every year as to accumulate Rs,6,00,000 at the end of 10 years, if interest is compounded annually at 10% rate of interest
a. ₹ 37,467 b. ₹ 37,476
c. ₹ 37,647 d. ₹ 37,674

MTP June 24 Series I

(142) The Scrap value of machine valued at Rs,10,00,000 after 15 years of depreciation is 10% p.a.
a. ₹ 215891.13 b. ₹ 205891.13
c. ₹ 225891.13 d. None

MTP June 24 Series I

(143) The effective annual rate of interest corresponding to nominal rate 6% p.a. payable quarterly is:
a. 6.14% b. 6.07%
c. 6.08% d. 6.09%

MTP June 24 Series I

(144) If the difference between the compound interest compounded annually and simple interest on a certain amount at 10% per annum for two years is ₹ 372, then the principal amount is.
a. ₹ 37,000 b. ₹ 37,200
c. ₹ 37,500 d. None of these

MTP June 24 Series I

(145) What will be the population after 3 years, when present population is 1,00,000 and the population increases at 3% in year 1st year, at 4% in second year and 5% in third year.
a. 1,12,476 b. 1,15,476
c. 1,20,576 d. 1,25,600

MTP June 24 Series I

(146) The value of furniture depreciates by 10% a year, if the present value of the furniture in an office is ₹ 21870, calculate the value of furniture 3 years ago:
a. ₹ 30,000 b. ₹ 40,000
c. ₹ 35,000 d. ₹ 50,000

MTP June 24 Series I

(147) A sum of money, lent out at simple interest, doubles itself in 8 years. Find in how many years will the sum become triple of itself.
a. 16 years b. 15 years
c. 20 years d. None of these

MTP June 24 Series II

(148) Find the effective rate of interest at 10% p.a. when interest is payable quarterly.
a. 10.38% b. 5%
c. 5.04% d. 4%

MTP June 24 Series II

(149) A man invests an amount of ₹ 15,860 in the names of his three sons A, B and C in such a way that they get the same interest after 2,3 and 4 years respectively. If the rate of interest is 5%, then the ratio of amount invested in the name of A, B and C is.
a. 6:4:3 b. 3:4:6
c. 30:12:5 d. None of these

MTP June 24 Series II

(150) What annual payment will discharge a debt of ₹ 770 due in 5 years, the rate of interest being 5% per annum SI ?
a. ₹ 150 b. ₹ 140
c. ₹ 130 d. None of these

MTP June 24 Series II

(151) ☆ Mr. X invests 'P' amount at Simple Interest rate 10% and Mr. Y invests 'Q' amount at Compound Interest rate 5% compounded annually. At the end of two years both get the same amount of interest, then the relation between two amounts P and Q is given by:
a. $P = \frac{41Q}{80}$ b. $P = \frac{41Q}{40}$
c. $P = \frac{41Q}{100}$ d. $P = \frac{41Q}{200}$

MTP June 24 Series II

(152) In what time will a sum of money double its y at 6.25% p.a. simple interest?
a. 5 years b. 8 years
c. 12 years d. 16 years

MTP June 24 Series II

(153) In what time will a sum of money double its y at 6.25% p.a. simple interest?
a. 250 b. 277
c. 300 d. 310

MTP June 24 Series II

(154) In how many years will a sum of money double at 5% p.a compounded interest?
a. 15 years 3 months
b. 14 years 2 months
c. 14 years 3 months
d. 15 years 3 months

MTP June 24 Series II

(155) A machine worth Rs. 4,90,740 is depreciated at 15% of its opening value each year. When would its value reduce by 90%?
a. 11 years 6 months
b. 11 years 7 months
c. 11 years 8 months
d. 14 years 2 months approximately

MTP June 24 Series II

(156) A machine worth of Rs. 4,90,740 is depreciated at 15% on its opening value each year. When its value reduces to Rs. 2,00,000
a. 4 years 6 months
b. 4 years 7 months
c. 4 years 5 months
d. 5 years 7 months approximately

MTP June 24 Series III

(157) Nominal rate of Interest 9.9% p.a. If Interest is compounded monthly. What will be the effective rate of Interest
a. 9.36 % b. 10.36 %
c. 11.36 % d. 9.9%

MTP June 24 Series III

(158) A sum of Money doubles itself at compound interest in 10 years. In how many years will it become eight times
a. 10 b. 30
c. 40 d. 35

MTP June 24 Series III

(159) The time in which a sum of money will be doubled at 6% compound interest compounded annually approximately.
a. 10 years b. 12 years
c. 13 years d. 14 years

MTP Sep 24 Series I

(160) The amount charged for a defined length of time for uses of principal, generally on year basis is known as
a. Balance b. Rate of Interest
c. Principal d. EMI

MTP Sep 24 Series I

(161) The Compounded interest ₹ 8000 for 6 months at 12% p.a payable quarterly is:
a. ₹ 487.20 b. ₹ 480
c. ₹ 380 d. None of these

MTP Sep 24 Series I

(162) The simple interest on sum of money at 6% p.a. for 7 years is equal to twice of simple interest on another sum for 9 years at 5 p.a. The ratio will be:
a. 2:15 b. 7:15
c. 15. 7 d. 1:7

MTP Sep 24 Series I

(163) Nominal rate of Interest is 9.9 % p.a. If interest is compounded monthly, what will be effective rate of Interest.
a. 10.35% b. 9.36%
c. 11.36% d. 9.9%

MTP Sep 24 Series I

(164) If the interest rate on a loan as 1% per month, the effective annual rate of interest is:
a. 12% b. 12.36%
c. 12.68% d. 12.84%

MTP Sep 24 Series II

(165) ☆ The simple interest on a certain sum of money is $\frac{1}{25}$ times of principal, the rate of interest when rate of interest and time are equal is
a. 2% b. 3%
c. 4% d. None of these

MTP Sep 24 Series II

(166) At what time a certain sum of money amounts to ₹ 400 at 10% p.a. S.I. and to ₹ 200 at 4% p.a. S.I.
a. 10 Yrs. b. 30 Yrs.
c. 50 Yrs. d. None of these

MTP Sep 24 Series II

(167) ₹ 6,400 amounts to ₹ 7840 in two years at simple interest. How much will a sum of ₹ 84 invested at the same rate of simple interest amount in four years?
a. ₹ 11.20 b. ₹ 112.20
c. ₹ 120.80 d. ₹ 121.80

MTP Sep 24 Series II

(168) ☆ A person gave a loan of ₹ 200 to Mr. X and recovered it at the rate of ₹ 35 for eight months, commencing from the end of first month. What is the effective rate of simple interest?
a. 10% b. 20%
c. 40% d. 60%

MTP Sep 24 Series II

(169) If the compound interest on a certain sum of money for 2 years at 4% p.a. be ₹ 510, then its simple interest of same time at same rate of interest is
a. ₹ 500 b. ₹ 510
c. ₹ 1000 d. None of these

MTP Sep 24 Series II

(170) On what sum will the difference between the S.I. and C.I. for 3 years at 6% p.a. amount to ₹ 13.77?
a. ₹ 1250 b. ₹ 1150
c. ₹ 1320 d. None of these

MTP Sep 24 Series II

(171) ☆ The Partners A & B together lent ₹ 3903 at 4% p.a interest compounded annually. After a span of 7 years, A gets the same amount as B gets after 9 years. The share of A is sum of ₹ 3903/- would have been
a. ₹ 875 b. ₹ 2280
c. ₹ 2028 d. ₹ 2820

Answer Key

1	a	2	a	3	b	145	a	146	a	147	a
4	b	5	a	6	c	148	a	149	a	150	b
7	b	8	a	9	b	151	a	152	d	153	d
10	b	11	c	12	c	154	b	155	d	156	d
13	b	14	d	15	d	157	a	158	b	159	b
16	c	17	a	18	b	160	b	161	a	162	c
19	c	20	d	21	d	163	a	164	c	165	a
22	b	23	b	24	a	166	c	167	d	168	d
25	b	26	a	27	b	169	a	170	a	171	c
28	b	29	b	30	d						
31	c	32	b	33	a						
34	c	35	d	36	c						
37	c	38	c	39	b						
40	a	41	b	42	d						
43	a	44	a	45	b						
46	b	47	c	48	b						
49	a	50	a	51	a						
52	a	53	b	54	a						
55	d	56	a	57	c						
58	d	59	a	60	c						
61	c	62	c	63	b						
64	a	65	b	66	a						
67	b	68	a	69	c						
70	a	71	a	72	c						
73	c	74	a	75	d						
76	b	77	a	78	c						
79	a	80	a	81	a						
82	a	83	a	84	d						
85	d	86	a	87	a						
88	a	89	c	90	c						
91	a	92	a	93	b						
94	a	95	c	96	a						
97	b	98	c	99	a						
100	a	101	b	102	a						
103	a	104	a	105	a						
106	a	107	d	108	b						
109	a	110	d	111	d						
112	a	113	c	114	b						
115	c	116	a	117	b						
118	b	119	d	120	b						
121	c	122	a	123	b						
124	c	125	d	126	c						
127	a	128	c	129	c						
130	a	131	c	132	c						
133	a	134	a	135	b						
136	d	137	a	138	b						
139	c	140	c	141	c						
142	b	143	a	144	b						

Future Value and Present Value of Annuity

Practice Questions

PYQ May 18

(1) Mr. X invest ₹ 10,000 every year starting from today for next 10 years suppose interest rate is 8% per annual compounded annually. Calculate future value of the annuity.
a. ₹ 1,56,454.88
b. ₹ 1,56,554.88
c. ₹ 1,44,865.625
d. None of these

PYQ May 18

(2) How much amount is required to be invested every year so as to accumulate ₹ 3,00,000 at the end of the 10 years, if interest is compounded annually at 10%?
a. ₹ 18,823.65
b. ₹ 18,328
c. ₹ 18,828.65
d. ₹ 18,882.65

PYQ Nov 18

(3) ★ A man invests an amount of ₹ 15,860 in the names of his three sons A, B and C in such a way that they get the same interest after 2, 3 and 4 years respectively. If the rate of interest is 5%, then the ratio of amount invested in the name of A, B and C is:
a. 6 : 4 : 3 b. 3 : 4 : 6
c. 30 : 12 : 5 d. None of these

PYQ Nov 18

(4) The value of furniture depreciates by 10% a year, it the present value of the furniture in an office is ₹ 21,870. Calculate the value of furniture 3 years ago
a. ₹ 30,000 b. ₹ 35,000
c. ₹ 40,000 d. ₹ 50,000

PYQ June 19

(5) Let a person invest a fixed sum at the end of each month in an account paying interest 12% per year compounded monthly. If the future value of this annuity after the 12th payment is ₹ 55,000 then the amount invested every month is?
a. ₹ 4,837 b. ₹ 4,637
c. ₹ 4,337 d. ₹ 3,337

PYQ Nov. 19

(6) Present value of a scooter is ₹ 7,290 if its value decreases every year by 10% then its value before 3 years is equal to:
a. 10,000 b. 10,500
c. 20,000 d. 20,500

PYQ Nov. 20

(7) Find the future value of annuity of ₹ 1,000 made annually for 7 years at interest rate of 14% compounded annually. Given that $1.14^7 = 2.5023$
a. 10,730.7 b. 5,365.35
c. 8,756 d. 9,892.34

PYQ Nov. 20

(8) Find the present value of ₹ 1,00,000 to be required after 5 years if the interest rate be 9%. Given that $1.09^5 = 1.5386$
a. 78,995.98 b. 64,994.15
c. 88,992.43 d. 93,902.12

PYQ Nov. 20

(9) A five year annuity due has periodic cash flow of ₹ 100 each year. If the interest rate is 8% the future value of this annuity is given by:
a. (₹ 100) × (future value at rate 8% for 5 years) × (0.08)
b. (₹ 100) × (future value at rate 8% for 5 years) × (1 - .08)
c. (₹ 100) × (future value at rate 8% for 5 years) × (1 + 0.08)
d. (₹ 100) × (future value at rate 8% for 5 years) × (1/0.08)

PYQ Nov. 20

(10) A person decides to invest ₹ 1,25,000 per year for the next five years in an annuity which gives 5% p.a. compounded annually. What is the approx. future value? [$1.05^5 = 1.2762$]
a. 1,59,535 b. 6,90,500
c. 5,90,704 d. 3,59,535

PYQ Nov. 20

(11) Which of the following statements is True? (assume that the yearly cash flow? Are identical for both annuities)
a. The present value of annuity due is greater than the present value of an ordinary annuity
b. The present value of an ordinary annuity is greater than the present value of an annuity due
c. The future value of an ordinary annuity is greater than the future value of an annuity due
d. The future value of an annuity due is equal to future value of an ordinary annuity

PYQ Nov. 20

(12) ₹ 2,500 is paid every year for 10 years to pay off a loan. What is the loan amount if interest rate be 14% p.a. compounded annually?
a. ₹ 15,847.90 b. ₹ 13,040.27
c. ₹ 14,674.21 d. ₹ 16,345.11

PYQ Jan. 21

(13) Find the future value of annuity of ₹ 1,000 made annually for 7 year at interest rate of 14% compounded annually
a. ₹ 10,730.7
b. ₹ 5,365.35
c. ₹ 8,756
d. ₹ 9892.34

PYQ Jan. 21

(14) ₹ 800 is invested at the end of each month in an account paying interest 5% per year compounded monthly. What is the future value of this annually after 10th payment?
a. ₹ 4,444 b. ₹ 8,756
c. ₹ 3,491 d. ₹ 8,151.67

PYQ Jan. 21

(15) The present value of an annuity immediate is the same as
a. Annuity regular for (n - 1) year plus the initial receipt in the beg. of the period.
b. Annuity regular for (n - 1) years
c. Annuity regular for (n + 1) years
d. Annuity regular for (n + 1) years plus the initial receipt in the beginning of the period.

PYQ July 21

(16) If the desired future value after 5 years with 18% interest rate is ₹ 1,50,000, then the present value (in ₹) is
a. 63,712 b. 65,568
c. 53,712 d. 41,712

PYQ July 21

(17) ★ A loan of ₹ 1,02,000 is to be paid back in two equal annual instalments. If the rate is 4% p.a. compounded annually, then the total interest charged under this instalment plan is:
a. 6,160 b. 8,120
c. 5,980 d. 7,560

PYQ July 21

(18) The future value of annuity of ₹ 2,000 for 5 years at 5% compounded annually is given as:
a. 51,051 b. 21,021
c. 11,051 d. 61,254

PYQ Dec. 21

(19) Mr. X wants to accumulate ₹ 50,00,000 at the end of 10 years. Then how much amount is required to be invested every year if interest is compounded annually at 10%? (Given that P (10,0.10) = 15.9374298)
a. ₹ 3,13,726.87
b. ₹ 4,13,726.87
c. ₹ 3,53,726.87
d. ₹ 4,53,726.87

PYQ Dec. 21

(20) The present value of an annuity of ₹ 25,000 to be received after 10 years at 6% per annum compounded annually is ₹ _____
a. ₹ 15,960 b. ₹ 13,960
c. ₹ 11,960 d. ₹ 17,960

Note: Options are as per single cashflow so annuity word should not be there.

PYQ June 22

(21) ₹ 2500 is paid every year for 10 years to pay off a loan. What is the loan amount if interest rate be 14% p.a. compounded annually?
a. ₹ 15,841.90 b. ₹ 13,040.27
c. ₹ 14,674.21 d. ₹ 14,010.90

PYQ June 22

(22) ₹ 200 is invested at the end of each month in an account paying interest 6% per year compounded monthly. What is the future value of this annuity after 10th payment?
a. ₹ 2,044 b. ₹ 12,044
c. ₹ 2,040 d. ₹ 12,000

PYQ June 22

(23) Anshika took a loan of ₹ 1,00,000 @ 8% for 5 years. What amount will she pay if she wants to pay the whole amount in five equal installments?
a. ₹ 25,045.63 b. ₹ 26,045.68
c. ₹ 28,045.50 d. None of these

PYQ June 22

(24) Ankit invests ₹ 3,000 at the end of each quarter receiving interest @ 7% p.a. for 5 years. What amount will be receive at the end of the period?
a. ₹ 71,200.20 b. ₹ 71,104.83
c. ₹ 73,204.83 d. None of these

PYQ June 22

(25) A company establishes a sinking fund to provide for the payment ₹2,00,000 debt maturity in 20 years contribution to the fund are to be made at the end of every year. Find amount of each deposit of interest is 10% p.a.?
a. ₹ 3,592.11 b. ₹ 3,492.11
c. ₹ 3,392.11 d. None of these

PYQ Dec 22

(26) How much amount is required to be invested every year so as to accumulate ₹ 5,00,000 at the end of 12 years if interest is compounded annually at 10% [A (12, 0.1) = 21.38428]
a. ₹ 23381.65 b. ₹ 24385.85
c. ₹ 26381.65 d. ₹ 28362.75

PYQ Dec 22

(27) ★ 10 years ago the earning per share (EPS) of ABC Ltd. was ₹ 5 share. Its EPS for this year is ₹ 22. Compute at what rat, EPS of the company grow annually?
a. 15.97% b. 16.77%
c. 18.64% d. 14.79%

PYQ Dec 22

(28) Raju invests ₹ 20,000 every year in a deposit scheme starting from today for next 12 years. Assuming that interest rate on this deposit is 7% per annum compounded annually. What will be the future value of this annuity?
a. ₹ 540, 526 b. ₹ 382, 813
c. ₹ 643, 483 d. ₹ 357, 769

PYQ Dec 22

(29) Mr. A invested ₹ 10,000 every year for next 3 years at the interest rate of 8 percent per annum compounded annually. What is future value of the annuity?
a. ₹ 32,644 b. ₹ 32,464
c. ₹ 34,264 d. ₹ 36,442

PYQ Dec 22

(30) ₹ 5,000 is invested every month end in an account paying interest @12% per annum compounded monthly. What is the future value of this annuity just after making 11th payment? (Given that $(1.01)^{11} = 1.1156$)
a. ₹ 57,800 b. ₹ 56,100
c. ₹ 56,800 d. ₹ 57,100

PYQ Dec 22

(31) Sinking fund factor is the reciprocal of:
a. Present value interest factor of a single cash flow
b. Present value interest factor of an annuity
c. Future value interest factor of an annuity
d. Future value interest factor of a single cash flow

PYQ Jun 23

(32) Suppose you have decided to make a Systematic Investment Plan (SIP) in a mutual fund with ₹ 1,00,000 every year from today for next 10 years where you get return at the rate of 10% per annum compounded annually. What is the future value of this annuity?
a. ₹ 17,35,114 b. ₹ 17,53,411
c. ₹ 17,35,411 d. ₹ 17,53,114

PYQ Jun 23

(33) A company want to replace its existing tool room machine at the end of 10 years, the expected cost of machine would be ₹ 10,00,000. If management of the company creates a sinking fund, how much provision needs to be made out of revenue each year which can earn at the rate of 10% compounded annually?
a. ₹ 74,625 b. ₹ 72,514
c. ₹ 62,745 d. ₹ 67,245

PYQ Jun 23

(34) A car is available for ₹ 4,98,200 cash payment or ₹ 60,000 cash down payment followed by three equal annual instalments. If the rate of interest charged is 14% per annum compounded yearly, then total interest charged in the instalment plan is (Given P(2,0.14) = 2.32163):
a. ₹ 1,46,314 b. ₹ 1,46,137
c. ₹ 1,28,040 d. ₹ 1,58,040

PYQ Jun 23

(35) Govinda's mother decides to gift him ₹ 50,000 every year starting from today for the next five years. Govinda deposits this amount in a bank as and when he receives and gets 10% per annum interest rate, compounded annually. What is the present value of this annuity? Given P(4,0.10) = 3.16987.
a. ₹ 2,80,493.5 b. ₹ 2,08,493.5
c. ₹ 2,08,943.5 d. ₹ 2,58,493.5

PYQ Dec 23

(36) How much amount is required to be invested every year so as to accumulate ₹ 30,000 at the end of 10 years if the interest compounded annually at 10%. Given A(10, 0.1) = 15.9374
a. ₹ 1882.36 b. ₹ 1828.30
c. ₹ 1832.65 d. ₹ 1853.65

PYQ Dec 23

(37) Suppose Mr. X invested ₹ 5,000 every year starting from today in mutual fund for next 10 years. Assuming that interest compounded annually is at 18% p.a.. What is future value?
a. ₹ 1,83,677.68 b. ₹ 1,38,678.85
c. ₹ 1,83,776.53 d. ₹ 1,38,774.55

PYQ Dec 23

(38) What will be the future value of an annuity of ₹ 2,500 made annually for 12 years at interest rate of 5% compounded annually
a. ₹ 37,588.58 b. ₹ 39,790.00
c. ₹ 40,873.13 d. ₹ 42,603.68

PYQ Dec 23

(39) Mrs. X invests in an annuity immediately that promises annual payments of ₹50,000 for the next 16 years. If the interest rate is 6% compounded annually then the approximate present value of this annuity is
a. ₹ 5,51,217.75 b. ₹ 5,75,900.00
c. ₹ 5,05,288.08 d. ₹ 5,35,612.45

PYQ Dec 23

(40) Calculate the present value of ₹ 2,000 to be required after 10 years compounded annually at 5% per annum given $(1.05)^{10} = 1.62889$
a. 1,227.82 b. 1,282.48
c. 1,328.35 d. 1,822.65

PYQ June 24

(41) If a loan of ₹ 30,000 is to be paid in 5 annual instalments with interest rate of 14% per annum, then the equal annual installment will be [take P(5, 0.14) = 3.43308]

a. ₹ 7400 b. ₹ 8100
c. ₹ 8738 d. ₹ 8,322

PYQ June 24

(42) Find the future value of an annuity of ₹ 5,000 made annually for 6 years at rate of 12% compounded annually, if $(1+0.12)^6 = 1.9738$

a. ₹ 45,575 b. ₹ 40,575
c. ₹ 39,465 d. ₹ 37,868

PYQ June 24

(43) What is the present value of an investment that pays ₹ 400 at the end of three years and ₹ 500 at the end of 6 years?

a. ₹ 320 b. ₹ 335
c. ₹ 340 d. ₹ 280

PYQ June 24

(44) At 8% compounded annually, how long will it take ₹ 750 to double?

a. 6.5 years b. 48 months
c. 9 years d. 12 years

PYQ June 24

(45) You are considering two investments: Investment A yields 10% compounded quarterly, Investment B yields r% compounded semi-annually. Both investments have equal annual yields, Find r

a. 19.875 % b. 10%
c. 10.38% d. 10.125%

PYQ June 24

(46) What is the present value of ₹ 5,000 to be obtained after six years if the interest rate is 5% per annum? for n = 6, 7, 8, 9 respectively.

$\frac{1}{(1.05)^n} = 0.74261, 0.71068, 0.67686, 0.64462$

a. ₹ 3,731 b. ₹ 3,553
c. ₹ 3,384 d. ₹ 3,223

PYQ June 24

(47) A person invests in a fund that pays 4% per annum for four years. The future value of current ₹ 4,000 would be? use, if needed

a. ₹ 3,419 b. ₹ 4,679
c. ₹ 4,866 d. ₹ 3,287

PYQ Sep 24

(48) What is the present value of ₹ 1000 to be received after two years compounded annually at 10% interest rate?

a. ₹ 826 b. ₹ 800
c. ₹ 836 d. ₹ 835

PYQ Sep 24

(49) In an account paying interest @9% per year compounded monthly, ₹ 200 is invested at the end of each month. What is the future value of this annuity after 10th payment?
(Where $(1.0075)^{10} = 1.0775$)

a. ₹ 2,066 b. ₹ 1,022
c. ₹ 2,044 d. ₹ 2,155

PYQ Sep 24

(50) What is the annual contribution required by an organization to accumulate ₹ 20,00,000 in ten years for the construction of a new manufacturing plant, utilizing a sinking fund with an annual interest rate of 6% compounded annually?
(Where A(10,0.06) = 13.180785)

a. ₹ 1,67,440.90 b. ₹ 1,51,736.03
c. ₹ 1,75,433.60 d. ₹ 1,83,714.28

PYQ Sep 24

(51) A loan of ₹ 16,550 is to be paid in three equal annual instalments at compound interest. The value of annual instalment, if the rate of interest is 10% per annum is:

a. ₹ 1,243 b. ₹ 6,655
c. ₹ 6,565 d. ₹ 1,343

Answer Key

1	a	2	a	3	a
4	a	5	c	6	a
7	a	8	b	9	c
10	b	11	a	12	b
13	a	14	d	15	a
16	b	17	a	18	c
19	a	20	b	21	b
22	a	23	a	24	b
25	b	26	a	27	a
28	b	29	b	30	a
31	c	32	d	33	c
34	c	35	b	36	a
37	d	38	b	39	d
40	a	41	c	42	b
43	a	44	c	45	d
46	a	47	b	48	a
49	a	50	b	51	b

Future Value and Present Value of Annuity

Study MTP Paper

MTP May 18

(1) Future value of Ordinary Annuity

a. $A(n,i) = A\left[\frac{(1+i)^n - 1}{i}\right]$

b. $A(n,i) = A\left[\frac{(1+i)^n + 1}{i}\right]$

c. $A(n,i) = A\left[\frac{1-(1+i)^n}{i}\right]$

d. $A(n,i) = A\left[\frac{(1+i)^n - 1}{i(1+i)^n}\right]$

MTP May 18, ICAI SM

(2) A sinking fund is created redeeming debentures worth ₹ 5,00,000 at the end of 25 years. How much provision need to be made out of profits each year provided sinking fund investments can earn at 4 % per annum

a. 12,006
b. 12,040
c. 12,039
d. 12,035

MTP Nov 18

(3) Find the future value of annuity ₹ 1000 made annually for 7 years at interest rate of 14% compounded annually is

a. ₹ 10730.71 b. ₹ 10735
c. ₹ 10734 d. ₹ 10237

MTP Nov 18

(4) ₹ 10,000 is paid every year to off a loan, the loan amount if interest be 14% per annum compounded annually is [P(10, 0.14) = 5.21611]

a. ₹ 5216.11 b. ₹ 1917.13
c. ₹ 52,161.1 d. ₹ 19,171. 3

Note: Duration was not given in the question, we have taken it as 10 from factor data given in que

MTP Nov 18

(5) The present value of ₹ 1 to be receive after 3 year compounded annually at 11% interest is

a. 0.713 b. 0.811
c. 0.731 d. 0.658

MTP Nov 18

(6) **A** Suppose your father decides to gift you ₹ 5,000 every year starts from today for the next four years. You deposit the amount is a bank as and when you receive and get 10% per annum interest rate compound annually. The present value of this annuity is [P(3,0.10) = 2.48685]

a. ₹ 17,434.25 b. ₹ 17,344.25
c. ₹ 17434.52 d. ₹ 17,344.52

MTP Nov 18

(7) **B** Find the Present value of ₹ 10,000 to be required after 5 years, If the Interest be 9%.

a. Rs.6500 b. Rs.6499.42
c. Rs.6600.52 d. Rs.6700.52

MTP Nov 18

(8) **A** Rs.500 is invested is invested at the end of each month is an account paying interest 8% per year compounded annually. The future value of annuity after 10th payment is

a. Rs.7243.31 b. Rs.7423.30
c. Rs.3451.50 d. Rs.3541.50

MTP May 19

(9) The furniture depreciates by 10% p.a. if the present value of the furniture in office is ₹21870, calculate the value of furniture 3 years ago.

a. ₹ 30000 b. ₹ 35000
c. ₹ 40000 d. ₹ 45000

MTP May 19

(10) Find the future value of an annuity of ₹ 500 made annually for 7 years at interest rate of 14 % per annum [Given the $(1.14)^7 = 2.5023$]

a. ₹ 5365.35 b. ₹ 5000
c. ₹ 5325.65 d. ₹ 6000.35

MTP May 19

(11) ₹ 200 invested at the end of each month in an account paying interest 6% per year compounded monthly. What is the future value of this annuity after 10th payment?

a. ₹ 2045 b. ₹ 5055
c. ₹ 2044 d. ₹ 2065

MTP May 19

(12) Suppose your father decides to gift you ₹ 10,000 every year starting from today for the next five years, you deposit this amount in a bank as and when you receive and get 10% p.a. CI. What is the present value of this annuity?

a. ₹ 67,156 b. ₹ 45,698.70
c. ₹ 41,698.70 d. None

MTP May 19

(13) Y bought Motor Bike Costing 80,000 by making down payment of ₹ 30000 and agreeing to make annual payment for four years. How much would be each payment if the interest on unpaid amount be 14% compounded annually.

a. ₹ 17160.25 b. ₹ 17600.25
c. ₹ 15600.25 d. ₹ 16600.25

MTP May 19 Series II

(14) A machine costs ₹ 1,00, 000. The depreciation rate is 10% per annum. The scrap value of the machine at the end of 5 years is

a. ₹ 49490 b. ₹ 59049
c. ₹ 61029 d. ₹ 51049

MTP May 19 Series II

(15) X bought a TV costing 25,000 making down payment of ₹ 5000 and agreeing to make equal annual payment for four years. How much would be each payment if the interest on unpaid amount be 14% compounded annually?

a. ₹ 6864.10 b. ₹ 6850.63
c. ₹ 6859 d. ₹ 6871

MTP May 19 Series II

(16) The future value of annuity on ₹ 5000 a year for 7 years at 14% per annum compound interest is

a. ₹ 5300 b. ₹ 53653.57
c. ₹ 5480 d. ₹ 5465.23

MTP May 19 Series II

(17) ₹ 5000 paid for ten years to off a loan. What is the loan amount if interest rate be 14% per annum compounded annually? (Given P (10, 0.14) = 5.21611

a. ₹ 26580.55 b. ₹ 26080.55
c. ₹ 26280.55 d. ₹ 27080.55

MTP May 19 Series II

(18) Suppose your friend decided gift to you ₹ 10000 every year starting from today for the next five years. Your deposit this amount in a bank as and when you receive and get 10% per annum interest compounded annually. What is the present value of this annuity?

a. Rs. 42698.70 b. Rs. 43698.70
c. Rs. 45698.70 d. Rs. 41698.70

MTP May 19 Series II

(19) ₹ 1000 is invested at the end of each month in an account paying interest 6% p.a. compounded monthly. What is the future value of annuity after 10th payment?

a. ₹ 10220 b. ₹ 1022
c. ₹ 20000 d. ₹ 1020

MTP Nov

(20) Anil bought a motor cycle costing ₹ 1,30,000 b making a down payment of ₹ 30,000 a agreeing to make equal annual payment for fi years. How much would be each payment if t interest on unpaid amount be 10% compound annually? [P (5, 0.10) = 3.7908].

a. ₹ 28379.70 b. ₹ 26300.70
c. ₹ 26500.70 d. ₹ 26379.70

MTP Nov

(21) Shoba borrows ₹ 50,00,000 to buy a house. If pays equal instalments for 20 years and 10 interest on outstanding balance, what will be t equal annual instalment?

a. ₹ 687298.4 b. ₹ 685298.4
c. ₹ 585298.4 d. ₹ 587298.4

MTP Nov

(22) An overdraft of ₹ 50,000 to be paid back in eq B annual installments over a period of 20 yea Find the value of Installment, if interest compounded annually at 14% per annu [Given $(1.14)^{20} = 13.74349$]

a. ₹ 550.50 b. 549.30
c. ₹ 559.50 d. ₹ 560.50

MTP May

(23) The present value of an annuity of ₹ 80 for years at 5% p.a is [Given $(1.05)^{20} = 2.6533$]

a. ₹ 997 (appx.) b. ₹ 900
c. ₹ 1,000 d. none of these

MTP May 20, ICAI

(24) A person bought a house paying ₹ 20,000 ca down and ₹ 4,000 at the end of each year for yrs. at 5% p.a. C.I. The cash down price is

a. ₹ 75,000 b. ₹ 76,000
c. ₹ 76,375.80 d. none of these.

MTP May 20, ICAI

(25) A man purchased a house valued at ₹ 3,00,0 He paid ₹ 2,00,000 at the time of purchase a agreed to pay the balance with interest at 12 per annum compounded half yearly in 20 eq half yearly instalments. If the first instalment paid after six months from the date of purch then the amount of each instalment is.

a. ₹ 8,718.45 b. ₹ 8,769.21
c. ₹ 7,893.13 d. none of these

MTP May 20, ICAI SM

(26) A person invests ₹ 500 at the end of each year with a bank which pays interest at 10% p.a C.I. annually. The amount standing to his credit one year after he has made his yearly investment for the 12th time is. [Given $(1.1)^{12} = 3.1384$]

a. ₹ 11,761.36 b. ₹ 10,000
c. ₹ 12,000 d. none of these

MTP May 20

(27) The present value of ₹ 10,000 due in 2 years at 5% p.a. compound interest when the interest is paid on half-yearly basis is

a. ₹ 9,070 b. ₹ 9,070
c. ₹ 9,060 d. none of these

MTP Nov 20

(28) Find the present value of ₹ 10,000 to be required after 5 years, if the interest rate be 9 per cent compounded annually.

a. ₹ 5500
b. ₹ 5600
c. ₹ 6000
d. ₹ 6500

MTP Nov 20

(29) ☆ A man borrows ₹ 4000 from a bank at 10% compound interest. At the end of every year ₹1,500 as part of repayment of loan and interest. How much is still owe to the bank after three such installments.

a. ₹ 359
b. ₹ 820
c. ₹ 724
d. ₹ 720

MTP Nov 20/ RTP Sep 24

(30) The future value of annuity of ₹ 1,000, made annually for 5 years at the interest of 14% compounded annually is [$(1.14)^5 = 1.925410$]

a. ₹ 5610
b. ₹ 6610
c. ₹ 6160
d. ₹ 6160

MTP March 21

(31) Future value of an ordinary annuity

a. $A(n,i) = A\left[\frac{(1+i)^n - 1}{i}\right]$

b. $A(n,i) = A\left[\frac{(1+i)^n + 1}{i}\right]$

c. $A(n,i) = A\left[\frac{1-(1+i)^n}{i}\right]$

d. $A(n,i) = A\left[\frac{(1+i)^n - 1}{i(1+i)^n}\right]$

MTP March 21

(32) Anil bought a motor cycle costing ₹ 1,50,000 by making a down payment of ₹ 50, 000 and agreeing to make equal annual payment for five years. How much would be each payment if the interest on unpaid amounts be 10% compounded annually? [P (5, 0.10) = 3.7908]

a. ₹ 26379.66 b. ₹ 26300.70
c. ₹ 26500.70 d. ₹ 26370.70

MTP March 21

(33) Shoba borrows ₹ 50,00,000 to buy a house. If he pays equal instalments for 20 years and 10% interest on outstanding balance, what will be the equal annual instalment? [P(20,0.10) = 8.51356]

a. ₹ 687298.4 b. ₹ 685298.4
c. ₹ 585298.4 d. ₹ 587298.4

MTP March 21

(34) How much money is to be invested every year so to accumulate ₹ 3,00,000 at the end of 10 years if interest is compounded annually at 10%

a. ₹ 18823.65 b. ₹ 18833.64
c. ₹ 18223.60 d. ₹ 16823.65

MTP Jun 23 Series I

(35) Find the present value of an ordinary annuity of 8 quarterly payments of ₹ 500 each, the rate of interest being 8% p.a. compound quarterly

a. 4275.00 b. 4725.00
c. 3662.50 d. 3266.50

MTP Jun 23 Series I

(36) How much amount is required to be invested every year so as to accumulate ₹ 5,00,000 at the end of 12 years if interest is compounded annually at 10 [(12,0.1) = 3.1384284)]

a. ₹ 23381.65 b. ₹ 24385.85
c. ₹ 26381.65 d. ₹ 28362.75

MTP Jun 23 Series I

(37) Raju invests ₹20,000 every year in a deposit scheme starting from today for next 12 years. Assuming that interest rate on this deposit is 7% per annum compounded annually. What will be the future value of this annuity?

a. ₹ 540,576 b. ₹ 382,813
c. ₹ 643,483 d. ₹ 357,769

MTP Jun 23 Series I

(38) Mr. A invested ₹ 20,000 p.a. for next 3 years at the interest rate of 8 percent p.a. compounded annually. What is future value of the annuity?
a. 62644 b. 62464
c. 64928 d. 63442

MTP Jun 23 Series I

(39) ₹ 10,000 is invested every month and in an account paying interest @12% per annum compounded monthly. What is the future value of this annuity just after making 11th payment
a. ₹ 115,600 b. ₹ 156,100
c. ₹ 156,800 d. ₹ 157,100

MTP Jun 23 Series I

(40) Sinking fund factor is the reciprocal of:
a. Present value interest factor of a single cash flow
b. Present value interest factor of an annuity
c. Future value interest factor of an annuity
d. Future value interest factor of a single cash flow.

MTP Jun 23 Series II

(41) Find the present value of an annuity which pays ₹ 200 at the end of each 3 months for 10 years assuming rate as 5% converted quarterly?
a. ₹ 3473.86 b. ₹ 3108.60
c. ₹ 6265.38 d. None of these

MTP Jun 23 Series II

(42) The amount of an annuity due consisting of 15 annual payments invested at 8% effective is ₹10,000. Find the size of each payment.
a. ₹ 873.86 b. ₹ 108.60
c. ₹ 341.01 d. None of these

MTP Jun 23 Series II

(43) The future value of an annuity of ₹ 5,000 is made annually for 8 years at interest rate of 9% compounded annually. $[(1.09)^8 = 1.99256)]$
a. ₹ 55,142.22 b. ₹ 65, 142.22
c. ₹ 65,532.22 d. ₹ 57,425.22

MTP Jun 23 Series II

(44) Paul borrows ₹ 20,000 on condition to repay it with compound interest at 5% p.a. in annual instalment of ₹ 2,000 each. Find the number of years in which the debt would be paid off.
a. 10 years b. 12 years
c. 14 years d. 15 years

MTP Dec 23 Series I

(45) Sinking fund factor is the reciprocal of ____
a. Present value of interest factor of a single cash flow
b. Present value interest factor of annuity
c. Future value of Interest factor of annuity
d. Future value of Interest factor of a single cash flow

MTP Dec 23 Series II

(46) A debt of ₹ 5000 with interest at the rate of 8% compounded quarterly is to be discharged by equal quarterly payments, the first payment being due today. Find the size of each payment.
a. ₹ 573.86 b. ₹ 669.17
c. ₹ 399.26 d. None of these

MTP Dec 23 Series II

(47) Find the future value of an annuity of ₹ 500 made annually for 7 years at interest rate of 14% compounded annually. $[(1.14)^7 = 2.5023]$
a. ₹ 5365.25 b. ₹ 5265.25
c. ₹ 5465.25 d. None of these

MTP Dec 23 Series II

(48) How much amount is required to be invested every year as to accumulate ₹ 6,00,000 at the end of 10th year, if interest is compounded annually at 10% rate of interest?
a. ₹ 37,467 b. ₹ 37,476
c. ₹ 37,647 d. ₹ 37,674

MTP Dec 23 Series II

(49) Paul borrows ₹ 20,000 on condition to repay with compound interest at 5% p.a. in annual instalment of ₹ 2,000 each. Find the number of years in which the debt would be paid off.
a. 10 years b. 12 years
c. 14 years d. 15 years

MTP June 24 Series I

(50) The future value of an annuity of ₹ 1500 made annually for 5 years at an interest rate of 10% compounded annually is
a. 9517.56 b. 9157.65
c. 9715.56 d. 9175.65

MTP June 24 Series I

(51) Find the present value of an annuity of ₹1,000 payable at the end of each year for 10 years. If rate of interest is 6% compounding per annum.
a. ₹ 7,360 b. ₹ 8,360
c. ₹ 12,000 d. None of these

MTP June 24 Series I

(52) Mr. A borrows 5,00,000 to buy a house. If he pays equal instalments for 20 years and 10% interest on outstanding balance what will be the equal annual instalment?
a. ₹ 58239.84 b. ₹ 58729.84
c. ₹ 68729.84 d. None of these

MTP June 24 Series I

(53) Suppose your mom decides to gift you ₹ 10,000 every year starting from today for the next sixteen years. You deposit this amount in a bank as and when you receive and get 8.5% per annum interest rate compounded annually. What is the present value of this money: [Given that P (15, 0.085) = 8.304236
a. ₹ 83,042 b. ₹ 90,100
c. ₹ 93,042 d. ₹ 10,100

MTP June 24 Series I

(54) Find the present value of an annuity which pays 200 at the end of each 3 months for 10 years assuming money to be worth 5% converted quarterly?
a. ₹ 3473.86 b. ₹ 3108.60
c. ₹ 6265.38 d. None of these

MTP June 24 Series II

(55) Arslan invested ₹ 10,000 at 8% per annum compound quarterly, then the value of the investment after 2 years is
a. ₹ 11,716.59 b. ₹ 10,716.59
c. ₹ 117.1659 d. None of these

MTP June 24 Series II

(56) The future value of an annuity of ₹ 1,000 made annually for 5 years at the interest of 14% compounded annually is:
a. ₹ 5,610 b. ₹ 6,610
c. ₹ 6,160 d. ₹ 5,160

MTP June 24 Series II

(57) Present value of a scooter is ₹ 7,290 if its value decreases every year by 10% then its value before 3 years is equal to:
a. 10,000 b. 10,500
c. 20,000 d. 20,5000

MTP June 24 Series II

(58) How much amount is required to be invested every year so as to accumulate ₹ 3,00,000 at the end of 10 years, if CI is annually at 10%?
a. ₹ 18,823.65 b. ₹ 18,000
c. ₹ 18,728.65 d. ₹ 18,882.65

MTP June 24 Series II

(59) The time by which a sum of money is 8 times of itself if it doubles itself in 15 years.
a. 42 years b. 43 years
c. 45 years d. 46 years

MTP June 24 Series III

(60) A sinking fund is created redeeming debentures worth Rs. 5,00,000 at the end of 25 years. How much provision need to be made out of profits each year provided sinking fund investments can earn at 4 % per annum
a. 12,006 b. 12,040
c. 12039 d. 12035

MTP June 24 Series III

(61) Future value of Ordinary Annuity
a. $A(n,i) = A\left[\frac{(1+i)^n - 1}{i}\right]$
b. $A(n,i) = A\left[\frac{(1+i)^n + 1}{i}\right]$
c. $A(n,i) = A\left[\frac{1-(1+i)^n}{i}\right]$
d. $A(n,i) = A\left[\frac{(1+i)^n - 1}{i(1+i)^n}\right]$

MTP Sep 24 Series II

(62) Mr. X bought an electronic item for ₹ 1000. What would be the future value of the same item after two years, if the value is compounded semi-annually at the rate of 22% per annum?
a. ₹ 1488.40 b. ₹ 1518.07
c. ₹ 2008.07 d. ₹ 2200.00

MTP Sep 24 Series II

(63) Mr. A borrows ₹ 5,00,000 to buy a house. If he pays equal instalments for 20 years and 10% interest on outstanding balance what will be the equal annual instalment?
a. ₹ 58239.84 b. ₹ 4445.41
c. ₹ 68729.84 d. None of these

MTP Sep 24 Series II

(64) ☆ The present value of an annuity which pays ₹ 200 at the end of each 3 months for 10 years, assuming money to be worth 5% converted quarterly
a. ₹ 3473.86 b. ₹ 3108.60
c. ₹ 114180.44 d. None of these

MTP Sep 24 Series II

(65) A company establishes a sinking fund to provide for the payment of ₹ 2,00,000 debt maturing in 20 years. Contributions to the fund are to be made at the end of every year. Find the amount of each annual deposit if interest is 5% per annum

a. ₹ 6,142 b. ₹ 6,049
c. ₹ 6,052 d. ₹ 6,159

Answer Key

1	a	2	a	3	a
4	c	5	c	6	a
7	b	8	a	9	a
10	a	11	c	12	a
13	a	14	b	15	a
16	b	17	b	18	d
19	a	20	d	21	d
22	b	23	a	24	c
25	a	26	a	27	c
28	d	29	a	30	b
31	a	32	a	33	d
34	a	35	c	36	a
37	b	38	b	39	a
40	c	41	c	42	c
43	a	44	c	45	b
46	b	47	a	48	c
49	c	50	b	51	a
52	b	53	c	54	c
55	c	56	b	57	a
58	b	59	c	60	a
61	a	62	b	63	d
64	d	65	b		

Application of Time Value and Other Concepts

Past Year Questions

PYQ June 19

(1) A person wants to lease out a machine costing ₹5,00,000 for a 10 year period. It has fixed a rental of ₹ 51,272 p.a. payable annually starting from the end of first year. Suppose rate of interest is 10% p.a. compounded annually on which money can be invested. To whom this agreement is favourable?

a. Favour of Lessee
b. Favour of Lessor
c. Not for both
d. Can't be determined

PYQ June

(2) ABC Ltd. Wants to lease out an asset cost ₹3,60,000 for a five year period. It has a fi rental of ₹ 1,05,000, per annum payable annu starting from the end of first year. Suppose rat interest is 14% per annum compounded annu on which money can be invested by the compa Is this agreement favourable to the company.

a. Yes b. No
c. It depends d. None of these

PYQ Nov

(3) What is the net present value of piece of prope which would be valued at ₹ 2 lakh at the end o years? (Annual rate of increase = 5%)

a. ₹ 1.81 lakh b. ₹ 2.01 lakh
c. ₹ 2.00 lakh d. None of these

PYQ June

(4) Determine the present value of perpetuity ₹50,000 per month @ rate of interest 12% p.a.

a. ₹ 45,00,000 b. ₹ 50,00,000
c. ₹ 55,00,000 d. ₹ 60,00,000

PYQ Nov

(5) A stock pays annually an amount of ₹ 10 from year onwards. What is the present value of perpetuity, if the rate of return is 20%?

a. 20.1 b. 19.1
c. 21.1 d. 22.1

PYQ Jan

(6) Assuming that the discount rate is 7% p.a. much would pay to receive ₹ 200 growing at annually forever?

a. ₹ 2,500 b. ₹ 5,000
c. ₹ 7,500 d. ₹ 10,000

PYQ July

(7) If discount rate is 14% per annum, then how m a company has to pay to receive ₹ 280 growing 9% annually forever?

a. ₹ 5,600 b. ₹ 2,800
c. ₹ 1,400 d. ₹ 4,200

PYQ July

(8) If the nominal rate of growth is 17% and infla is 9% for the five years. Let P be the G Domestic Product (GDP) amount at the pre year then the projected real GDP after 6 years

a. 1.587 P b. 1.921 P
c. 1.403 P d. 2.51 P

PYQ July 21

(9) If a person bought a house by paying ₹ 45,00,000 down payment and ₹ 80,000 at the end of each year till the perpetuity. Assuming the rate of interest as 16% the present value of house (in ₹) is given as:

a. 47,00,000 b. 45,00,000
c. 57,80,000 d. 50,00,000

PYQ July 21

(10) Operating profit of a manufacturer for five years

Years	Operating profit (in lakh ₹)
1	90
2	100
3	106.4
4	107.14
5	120.24
6	157.34

Then the operating profit of Compound Annual Growth Rate (CAGR) for year 6 with respect to year 2 is given that:

a. 9% b. 12%
c. 11% d. 13%

PYQ July 21

(11) If the cost of capital be 12% per annual, then the net present value from given cash flow:

Years	Operating profit (in thousands ₹)
0	-100
1	60
2	40
3	50

a. 31048 b. 34185
c. 21048 d. 24187

PYQ June 22

(12) Assuming that the discount rate is 7% p.a. How much would you pay to receive ₹ 200, growing at 5% annually forever?

a. ₹ 2,500 b. ₹ 5,000
c. ₹ 7,500 d. ₹ 10,000

PYQ June 22

(13) The CAGR of a initial value of a investment of ₹15,000 and final value of ₹ 25,000 in 3 years is:

a. 19% b. 18.56%
c. 17.56% d. 17%

PYQ Jun 23

(14) Ms. Paul invested ₹ 1,00,000 in a mutual fund scheme in January 2018. After one year in January 2019, she got a dividend amounting to ₹10,000 for first year, ₹ 12,000 for second year, ₹ 16,000 for third year, ₹ 18,000 for fourth year and ₹ 21,000 for fifth year in January 2023. What Compounded Annual Growth Rate (CAGR) dividend return? Given $1.2038^4 = 2.1$.

a. 20.38% b. 18.59%
c. 16.36% d. 15.89%

PYQ Jun 2

(15) If the discount rate is 10% per annum, how muc amount would you pay to receive ₹ 2,500 growing at 8%, annually forever?

a. ₹ 1,25,000 b. ₹ 2,50,000
c. ₹ 1,50,000 d. ₹ 2,00,000

PYQ Jun 2

(16) Mr. Sharad got his retirement benefits amounting to ₹ 50,00,000. He want to receive a fixed monthly sum of amount for his rest of life, starting after one month and thereafter he want to pass on the same to future generation. He expects to earn an interest of 9% CI Annually. Determine how much perpetuity amount he will receive every month?

a. ₹ 39,500 b. ₹ 38,500
c. ₹ 37,500 d. ₹ 36,600

PYQ Dec 23

(17) A person wants to open a shop have two options to acquire a commercial space either by leasing for 10 years at annual rent of ₹ 2,00,000 or by purchasing the space for ₹12,00,000. If person can borrow money at 14% compounded per annum. Which alternate is most suitable?

a. Leasing b. Purchase
c. Can't say d. Data insufficient

PYQ Dec 23

(18) If the initial investment of ₹ 4,00,000 becomes ₹6,00,000 in 24 months, then CAGR is

a. 30.33% b. 22.4%
c. 19.46% d. 14.47%

PYQ June 24

(19) Assuming that the discount rate is 12% per annum, how much would you pay to get ₹ 100 per year, growing at 4%, annually forever?

a. ₹ 1,425 b. ₹ 1,300
c. ₹ 1,250 d. ₹ 1,150

PYQ June 24

(20) You bought a painting 10 years ago as an investment. You originally paid ₹ 85,000 for it. If you sold it for ₹ 4,84,050, what was your annual return on investment?

a. 47% b. 4.7%
c. 19% d. 12.8%

PYQ Sep 24

(21) The Earning Per Share (EPS) of a company for five years is given below:

Year	EPS
2019	40
2020	25
2021	40
2022	60
2023	90

Calculate the Compounded Annual Growth Rate (CAGR) of EPS

a. 23.47% b. 24.47%
c. 22.47% d. 21.47%

PYQ Sep 24

(22) A Perpetuity has a cash flow of ₹ 625 and a required rate of return of 8%. If the cash flow is expected to grow at a constant rate of 4% per year, then the intrinsic value of this perpetuity (present value of growing perpetuity) is:

a. ₹ 13,000 b. ₹ 15,625
c. ₹ 14,250 d. ₹ 16,667

PYQ Sep 24

(23) An investor intends to purchase a three year ₹1,000 per value bond having nominal interest rate of 10%. Aat what price the bond may be purchased now, if it matures at par and the investor requires a rate of return of 14%?

a. ₹ 907.125 b. ₹ 904
c. ₹ 905.25 d. ₹ 909

Answer Key

1 a	2 a	3 a
4 b	5 a	6 d
7 a	8 a	9 d
10 b	11 c	12 d
13 b	14 a	15 a
16 c	17 a	18 b
19 c	20 c	21 c
22 b	23 a	

MTP May 19 Series II, ICAI SM

(1) A machine can be purchased for ₹ 50,000. Machine will be contributing ₹ 12,000 per year for the next five years. Assuming borrowing cost is 10% per annum. Determine whether machine should be purchased or not

a. Should be purchased
b. Should not be purchased
c. Can't say about purchase
d. none of the above

MTP Nov 19, ICAI SM

(2) A company is considering proposal of purchasing a machine either by making full payment of ₹ 4000 or by leasing it for four years at an annual rate of ₹1250. Which course of action is preferable if the company can borrow money at 14% compounded annually? [P (4,0.14) = 2.9137]

a. leasing is not preferable
b. leasing is preferable
c. cannot determined
d. none of these

MTP May 20, ICAI SM

(3) A person desires to create a fund to be invested at 10% CI per annum to provide for a prize of ₹ 300 every year. Using V = a/I find V and V will be

a. ₹ 2,000 b. ₹ 2,500
c. ₹ 3,000 d. none of these.

MTP Nov 20

(4) A company is considering proposal of purchasing a machine either by making full payment of ₹ 4,000 or by leasing it for 4 years at an annual rent of ₹ 1250. Which course of action is preferable? If the company can borrow money at 14 % per annum? [Given: $(1.14)^4 = 1.6870$]

a. Leasing preferable
b. Leasing is not preferable
c. Can't say
d. None of these

MTP March 21

(5) A company is considering proposal of purchasing a machine either by making full payment of ₹ 4000 or by leasing it for four years at an annual rate of ₹ 1250. Which course of action is preferable if the company can borrow money at 14% compounded annually? [P (4,0.14) = 2.9137]

a. Leasing is not preferable
b. Leasing is preferable
c. Cannot be determined
d. None of these above.

MTP Apr 21

(6) A machine can be purchased for ₹ 50,000. Machine will contribute ₹ 12,000 per year for the next five years. Assume borrowing cost is 10% per annum. Determine whether machine should be purchased or not: (P(5,0.10) = 3.79079

a. Should be purchased
b. Should not be purchased
c. Can't say about purchase
d. none of the above

MTP Dec 2022 Series II

(7) ★ A ₹1000 bond paying annual dividends at 8.5% will be redeemed at par at the end of 10 years. Find the purchase price of this bond if the investor wishes a yield rate of 8%

a. ₹ 907.135 b. ₹ 1033.54
c. ₹ 945.67 d. None of these

MTP May 18

(8) Nominal Rate of Return =

a. Real Rate of Return – Inflation
b. Real Rate of Return + Inflation
c. Real Rate of Return / Inflation
d. Real Rate of Return × Inflation

MTP May 18

(9) Net Present value ≥ 0, then

a. Accept the Proposal
b. Reject the proposal
c. Not Feasible
d. None of the above

MTP May 19

(10) Nominal Rate of Return =

a. Real Rate of Return – Inflation
b. Real Rate of Return + Inflation
c. Inflation -Real Rate of return
d. None of the above

MTP May 19

(11) Net Present Value (NPV)

a. Present value of net cash Inflow – Total net Investment
b. Present value of net cash Inflow – Present value of cash outflow
c. Total net Investment- Present value of net cash Inflow
d. a or b

MTP Nov 21

(12) If the cost of capital be 12% per annum, then the Net Present Value (in nearest Rs.) from the given cash flow is given as ₹ in thousands

Year	0	1	2	3
Operating profit	(100)	60	40	50

a. ₹ 34,048 b. ₹ 34,185
c. ₹ 51,048 d. ₹ 21,048

MTP Nov 21

(13) ★ Find CAGR, if the operating profit of a manufacturer for five years is given as

Yr.	1	2	3	4	5	6
OP	90	100	106.4	107.14	120.24	157.35

a. 9% b. 12%
c. 11% d. 13%

MTP Oct 21

(14) The nominal rate of growth is 17% and inflation is 9% for the five years. Let P be the Gross Domestic Product (GDP) amount at the present year then the projected real GDP after 6 years is

a. 1.587P b. 1.921 P
c. 1.403 P d. 2.51 P

MTP Oct 21

(15) A person desires to create a fund to be invested at 10% CI per annum to provide for a prize of ₹ 300 every year. Using V = a/I find V

a. ₹ 2,000 b. ₹ 2,500
c. ₹ 3,000 d. none of these

MTP June 22

(16) Determine the present value of perpetuity of ₹50,000 per month at the rate interest 12% p.a.

a. ₹ 45,00,000 b. ₹ 50,00,000
c. ₹ 55,00,000 d. ₹ 60,00,000

MTP Dec 22 – Series I

(17) Assuming that the discount rate is 7% p.a. How much would you pay to receive ₹ 500. Growing at 5% annually forever?

a. ₹ 2500 b. ₹ 5000
c. ₹ 7500 d. ₹ 25000

MTP Dec 22 – Series I

(18) Ravi made an investment of ₹ 15,000 in a scheme and at the time of maturity, the amount was ₹25,000. If the Compound Annual Growth Rate (CAGR) for this investment is 8.88%. Calculate the approximate number of years for which he has invested the amount.

a. 6 b. 7.7
c. 5.5 d. 7

MTP Jun 23 – Series I

(19) A machine with useful life of 7 years costs ₹ 10,000 while another machine with useful life of 5 years costs ₹ 8000. The first machine saves labour expenses of ₹ 1900 annually and the second one saves labour expenses of ₹ 2200 annually. Determine the preferred course of action. Assume cost of borrowing as 10% compounded per annum.
a. 1st machine should be purchased
b. 2nd machine should be purchased
c. Information is not sufficient
d. None of these

MTP Jun 23 – Series I

(20) 10 years ago the earning per share (EPS) of ABC Ltd. was ₹ 5 share its EPS for this year is ₹ 22. Compute at what rate, EPS of the company grow annually?
a. 15.97% b. 16.77%
c. 18.64% d. 14.79%

MTP Jun 23 – Series II

(21) A company is considering proposal of purchasing a machine full payment of ₹ 4000 or by leasing it for 4 years at an annual rate of ₹ 1250. Which course of action is preferable if the company can borrow money at 14% compounded annually?
a. Purchasing b. Leasing
c. Both are same d. None of these

MTP Jun 23 – Series II

(22) Find the purchase price of a ₹ 1000 bond redeemable all the paying annual dividends at 4% if the yield rate is to be 5% effective.
a. ₹ 884.16 b. ₹ 984.17
c. ₹ 1084.16 d. None of these

MTP Dec 23 – Series I/ MTP Sep 24 – I

(23) A stock pays annually an amount of Rs. 10 from 6th year onwards. What is the present value of perpetuity, if the rate of return is 20%
a. 20.1 b. 19.1
c. 21.1 d. 22.1

MTP Dec 23 – Series I/ MTP Sep 24 - I

(24) If the nominal rate of growth is 17% and inflation is 9% for the five years. Let P be the Gross domestic Product (GDP) amount at the present year then the projected real GDP after 6 years is
a. 1.587 P b. 1.921 P
c. 1.403 P d. 2.51 P

MTP Dec 23 – Series I

(25) If discounted rate is 14% per annum, then how much company has to receive Rs.280 growing at 9% annually forever?
a. Rs.5600 b. Rs.2800
c. Rs.1400 d. Rs.4200

MTP Jun 23 – Series II

(26) A machine can be purchased for ₹50,000. Machine will contribute ₹ 12000 per year for the next five years. Assume borrowing cost is 10% per annum compounded annually. Determine whether machine should be purchased or not.
a. Purchased
b. Not purchased
c. Information insufficient
d. None of these

MTP Dec 23 – Series II

(27) A ₹ 1000 bond paying annual dividends at 8.5% will be redeemed at par at the end of 10 years. Find the purchase price of this bond if the investor wishes a yield rate of 8%.
a. ₹ 907.135 b. ₹ 1033.54
c. ₹ 945.67 d. None of these

MTP Dec 23 – Series II

(28) Assuming that the discount rate is 10% per annum, how much would you pay to receive ₹800, growing at 8%, annually, forever?
a. ₹ 1000 b. ₹ 1050
c. ₹ 950 d. None of these

MTP June 24 Series I

(28) A company may obtain a machine either by leasing it for 5 years (useful life) at an annual rent of Rs. 2,000 or by purchasing the machine for Rs. 8,100. If the company can borrow money at 18% per annum, which alternative is preferable?
a. Leasing b. Purchasing
c. Can't say d. None of these

MTP June 24 Series II

(29) In ____ receipts / payments takes place forever.
a. Annuity
b. Perpetuity
c. Annuity regular
d. Annuity due

MTP June 24 Series II

(30) Nominal Rate of Return =
a. Real Rate of Return – Inflation
b. Real Rate of Return + Inflation
c. Real Rate of Return / Inflation
d. Real Rate of Return × Inflation

MTP June 24 Series III

(31) Net Present value ≥ 0, then
a. Accept the Proposal
b. Reject the proposal
c. Not Feasible
d. None of the above

MTP June 24 Series III

(32) Assuming, that discount rate is 7% per annum, how much would you pay to receive Rs.50, growing at 5%, annually, forever.
a. 2500
b. 3000
c. 3500
d. 4000

MTP Sep 24 Series II

(33) The value of the present value of a sequence of payments of ₹ 80 made at the end of each 6 months and continuity forever, if money is worth 4% compounded semi-annually is
a. ₹ 4,000 b. ₹ 5,000
c. ₹ 3,000 d. None of these

Answer Key

1 b	2 b	3 c
4 a	5 b	6 b
7 b	8 b	9 a
10 b	11 d	12 d
13 b	14 a	15 c
16 b	17 d	18 a
19 b	20 a	21 b
22 B	23 a	24 a
25 a	26 b	27 b
28 a	29 b	30 b
31 a	32 a	33 a