

11th Standard

Reg.No.:

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Time : 01:05:00 Hrs

Total Marks : 50

Part-A

$$4 \times 1 = 4$$

- 1) The compounded interest on Rs. P after T years at R% p.a., compounded annually is

$$(a) \quad P \overset{\text{Rs.}}{\left[\left(1 + \frac{R}{100} \right)^T + 1 \right]} \quad (b) \quad P \overset{\text{Rs.}}{\left[\left(1 + \frac{R}{100} \right)^T - 1 \right]} \quad (c) \quad P \overset{\text{Rs.}}{\left[\left(1 + \frac{R}{100} \right)^T - 100 \right]} \quad (d) \quad P \overset{\text{Rs.}}{\left[\left(1 + \frac{R}{100} \right)^T + 100 \right]}$$

- 2) The compound interest on Rs. 400 for 2 years at 5% p.a compounded annually is

(a) Rs. 45 (b) Rs. 41 (c) Rs. 20 (d) Rs. 10

- 3) The interest on Rs. 24,000 at the rate of 5% C.I. for 3 years.

(a) Rs. 3,783 (b) Rs. 3,793 (c) Rs. 4,793 (d) Rs. 4,783

- 4) The difference between S.I and C.I on a sum of money at 5% p.a for 2 years is Rs. 25. Then the sum is.

(a) 10.000 (b) 8.000 (c) 9.000 (d) 2.000

Part-B

 $4 \times 2 = 8$

- 5) Write out the first 5 terms of each of the following sequences

$$\langle \frac{(-1)^{n-1}}{n+1} \rangle$$

- 6) Find the general term of the following sequence

1, 4, 9, 16, 25 ...

- 7) Find the general term of the following sequence

3, 7, 11, 15, 19, 23, ...

- 8) Find the general term of the following sequence

2.1, 2.01, 2.001, 2.0001, ...

Part-C

$$6 \times 3 = 18$$

- 9) A person deposits a sum of Rs. 10,000 in the name of his new-born child. The rate of interest is 12 % p.a. What is the amount that will accrue on the 20th birthday of the beneficiary if the interest is compounded monthly.

- 10) The population of a city in 1987 was 50,000. The population increases at the rate of 5 % each year. Find the population of the city in 1997.

- 11) Find the present value of an amount of Rs. 12,000 at the end of 5 years at 5% c.i.

- 12) What sum will amount to Rs. 5,525 at 10 % p.a. compounded yearly for 13 years.

- 13) At what rate percent p.a. C.I. will Rs. 2,000 amount to Rs. 3,000 in 3 years if the interest is reckoned half yearly.

- 14) Verify that the A.M., G.M. and H.M. between 25 and 4 form a decreasing G.P.

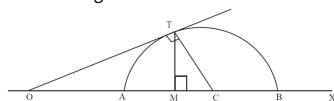
Part-D

$$4 \times 5 = 20$$

- 15) If a, b, c be in H.P., prove that $\frac{b+a}{b-a} + \frac{b+c}{b-c} = 2$

- 16) Find the effective rate of interest when the rate of interest is 15 % and the interest is paid half yearly.

- 17) Represent the A.M, G.M. and H.M. geometrically and hence show that they form a decreasing G.P.



- 18) A person purchases a house of worth Rs. 98,000 on instalment basis such that Rs. 50,000 is to be paid in cash on the signing of the contract and the balance in 20 equal instalments which are to be paid at the end of each year. Find each instalment to be paid if interest be reckoned 16% p.a. compounded annually
