## **Topic: Interest & Annuity**

- Find the compound amount and compound interest of ₹ 5000 invested for 4 years at 7% if the interest is compounded (i) annually, (ii) semi annually
- Find the compound amount and compound interest of ₹ 80000 invested for 5 years at 10% if the interest is compounded (i) quarterly, (ii) semi annually
- 3. Find the compound amount and compound interest of ₹ 60000 invested for 6 years at 9% if the interest is compounded (i) annually, (ii) quarterly
- **4.** Mr. Kishore lent ₹ 4000 to Mr. Amit and ₹ 6000 to Mr. Sujal for a period of 10 years and received total of ₹ 3500 as S.I. Find (*i*) rate of interest, (*ii*) S.I. from Mr. Amit and Mr. Sujal
- 5. Find the rate of interest if a person depositing Rs. 1000 annually for 2 years receives Rs. 2070.
- 6. Mr. Akash lent Rs. 5000 to Mr. Prashant and Rs. 4000 to Mr. Sagar for 5 years and received total simple interest of Rs. 4950. Find (i) the rate of interest and (ii) simple interest of each.
- 7. Find the principal for which the SI for 8 years at 7.5% is 825 less than the SI for 6½ years at 10.5%.
- 8. Miss Pankaj Kansra lent Rs. 2560 to Mr. Abhishek and Rs. 3650 to Mr. Ashwin at 6% rate of interest. After how many years should he receive a total interest of Rs. 3726?
- **9.** Mrs. Prabhu lent a total of Rs. 48,000 to Mr. Diwakar at 9.5% for 5 years and to Mr. Ratnakar at 9% for 7 years. If she receives a total interest of Rs. 25,590 find the amount she lent to both.
- **10.** Mr. Santosh wants to invest some amount for 4 years in a bank. Bank *X* offers 8% interest if compounded half yearly while bank *Y* offers 6% interest if compounded monthly. Which bank should Mr. Santosh select for better benefits?
- 11. Mr. Ashfaque Khan invested some amount in a bank giving 8.5% rate of interest for 5 years and some amount in another bank at 9% for 4 years. Find the amounts invested in both the banks if his total investment was Rs. 75,000 and his total interest was Rs. 29,925
- **12.** Mr. Akash lent Rs. 5000 to Mr. Prashant and Rs. 4000 to Mr. Sagar for 5 years and received total simple interest of Rs. 4950. Find (i) the rate of interest and (ii) simple interest of each.
- Mr. Santosh invested certain principal for 5 years at 10% interest compounded yearly. If he received
  ₹72957.5 at the end of 5<sup>th</sup> year, find the periodic payment he made.
- **14.** Find the present value of an immediate annuity of Rs. 1600 for 2 years at 7% p.a. compounded half yearly.

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- **15.** Mr. Paradkar is interested in saving a certain sum which will amount to Rs. 3, 50,000 in 5 years. If the rate of interest is 12% p.a., how much should he save yearly to achieve his target?
- 16. Mangesh borrowed a certain amount from Manish at a rate of 9% for 4 years. He paid Rs. 360 as simple interest to Manish. This amount he invested in a bank for 3 years at 11% rate of interest compounded quarterly. Find the compound interest Mangesh received from the bank after 3 years
- **17.** What is the value of the annuity at the end of 5 years, if Rs. 1000 p.m. is deposited into an account earning interest 9% p.a. compounded monthly? What is the interest paid in this amount?
- 18. Find the future value of an immediate annuity after 6 years with the periodic payment of ₹ 15000 at 5% p.a. if the period of payments is yearly.
- 19. What periodic payments Mr. Narayanan has to make if he has borrowed Rs. 1, 00,000 at 12% p.a. compounded annually for 12 years? [(1.12)12 = 3.896]
- 20. Find the sum invested and the accumulated amount for an ordinary annuity with periodic payment of Rs. 2500, at the rate of interest of 9% p.a. for 2 years if the period of payment is (a) yearly, (b) half-yearly, (c) quarterly or (d) monthly.
- 21. Mr. Banerjee wants to accumulate Rs. 5, 00,000 at the end of 10 years from now. How much amount should he invest every year at the rate of interest of 9% p.a. compounded annually?
- 22. Find the periodic payment to be made so that Rs. 25000 gets accumulated at the end of 4 years at 6% p.a. compounded annually.
- Dr. Wakankar, a dentist has started his own dispensary. He wants to install a machine chair which costs
  Rs. 3, 25,000. The machine chair is also available on monthly rent of Rs. 9000 at 9% p.a. for 3 years.
  Should Dr. Wakankar buy it in cash or rent it?
- **24.** A sum of Rs. 50,000 is required to buy a new machine in a factory. What sinking fund should the factory accumulate at 8% p.a. compounded annually if the machine is to be replaced after 5 years?
- **25.** Regency Co-op. Hsg. Society which has 50 members require Rs. 12, 60,000 at the end of 3 years from now for the society repairs. If the rate of compound interest is 10% p.a., how much fund the society should collect from every member to meet the necessary sum?

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- 26. The present cost of a machine is Rs. 80,000. Find the sinking fund the company has to generate so that it could buy a new machine after 10 years, whose value then would be 25% more than of today's price. The rate of compound interest being 12% p.a. compounded annually.
- 27. Mr. Lalwaney is of 40 years now and wants to create a fund of Rs. 15,00,000 when he is 60. What sum of money should he save annually so that at 13% p.a. he would achieve his target?
- 28. Mr. Shyam Rane has borrowed a sum of Rs. 100000 from a bank at 12% p.a. and is due to return it back in 5 monthly installments. If he will pay the EMI ₹ 20604 then construct the amortization table of repayment. (for first 3 installments)
- 29. Mr. Chintan has borrowed a sum of ₹ 60,000 from Mr. Shailesh at 7.2 % p.a. and is due to return it back in 3 monthly installments. If he will pay the EMI ₹ 20241 then construct the amortization table of repayment.
- 30. Mrs. Gaikwad has taken a loan of ₹ 1, 20,000 from a bank at 12% p.a. If the loan has to be returned in 4 years, find the EMI, Mrs. Gaikwad has to pay.