



PERSONALITY DEVELOPMENT ASSOCIATION

MADRAS INSTITUTE OF TECHNOLOGY

“DISCOVER THYSELF”

Aptitude class No:09

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FORMULAE:

SIMPLE INTEREST:

1. Simple Interest, $SI = P \times R \times T / 100$, where P is the principal, R is the rate of interest per unit time period and T is the time period.
2. Amount = Principal + SI

COMPOUND INTEREST:

3. Compound Interest (CI) = A – P
4. When interest is compound Annually:

$$\text{Amount} = P \left(1 + \frac{R}{100} \right)^n$$

5. When interest is compounded Half-yearly:

$$\text{Amount} = P \left[1 + \frac{(R/2)}{100} \right]^{2n}$$

6. When interest is compounded Quarterly:

$$\text{Amount} = P \left[1 + \frac{(R/4)}{100} \right]^{4n}$$

7. When interest is compounded Annually but time is in fraction, say $3\frac{2}{5}$ years.

$$\text{Amount} = P \left(1 + \frac{R}{100} \right)^3 \times \left(1 + \frac{\frac{2}{5}R}{100} \right)$$

8. When Rates are different for different years, say $R_1\%$, $R_2\%$, $R_3\%$ for 1st, 2nd and 3rd year respectively.

$$\text{Then, Amount} = P \left(1 + \frac{R_1}{100} \right) \left(1 + \frac{R_2}{100} \right) \left(1 + \frac{R_3}{100} \right).$$

PROBLEMS:

1. A sum of money amounts to Rs.28,000 in 2 years at 20 % simple interest per annum. Find the sum.
2. The simple interest on a sum of money in 5 years at 12 % per annum is Rs.400 less than the simple interest accrued on the same sum in 7 years at 10 % per annum. Find the sum.
3. A sum of Rs.1000 was lent to two people, one at the rate of 5 % and other at the rate of 8 %. If the simple interest after one year is Rs.62, find the sum lent at each rate.
4. If Rs.5000 amounts to Rs.5832 in two years compounded annually, find the rate of interest per annum.
5. A sum of money amounts to Rs.669 after 3 years and to Rs. 1003.50 after 6 years on compound interest. Find the sum.
6. An investment doubles itself in 15 years if the interest is compounded annually. How many years will it take to become 8 times?
7. The difference between the SI and CI on a certain sum of money at 10 % rate of annual interest for 2 years is Rs. 549. Find the sum.
8. The compound interest on a certain sum of money for 2 years at 10% per annum is Rs.420. What will be simple interest on the same sum at the same rate and for the same time will be
9. The value T of a book depreciates every year at the rate of 10% on its value at the beginning of that year. If the present value of the book is Rs.729, its worth 3 years ago was
10. A bank offers 5% compound interest calculated on half-yearly basis. A customer deposits Rs.1600 each on 1st January and 1st July of a year. At the end of the year, way of interest is:
11. The compound interest on a certain sum for 2 years at 10% per annum is Rs.525. The simple interest on the same sum for double the time at half the rate percent per annum is:
12. The population of a town is 40,000. It decreases by 20 per thousand per year. Find out the population after 2 years.
13. Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14% p.a. and 11% p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3508, what was the amount invested in Scheme B?