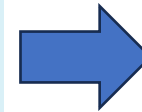# Simple Interest

Simple Interest

Concept:- 1

❖   Borrowed money is called Principal and it is denoted by 'P'.

❖   Money is borrowed for certain time period, that time is called interest time and it is denoted by 'T' or 't'.

❖   The principal becomes Amount when interest is added to it Amount is represented as A.

❖   So, Amount = Principal + Interest $\Rightarrow$ A = P + S.I.

OR

Interest = Amount – Principal $\Rightarrow$ S.I = A – P

❖   Interest on Rs. 100 in one year is called Rate of Interest.

❖ $SI = \dfrac{Principal \times Rate \times Time}{100}$

or,

$S.I = \dfrac{P \times R \times T}{100}$

$P = \dfrac{S.I \times 100}{R \times T}$

$R = \dfrac{S.I \times 100}{P \times T}$

$T = \dfrac{S.I \times 100}{P \times R}$

Concept:- 2

Change in rate of interest and time when interest is paid half yearly or Quarterly

When Interest is payable half – yearly $\longrightarrow$ Rate will be half and time will be twice

When interest is payable quarterly $\longrightarrow$ Rate will be one-fourth and time will be four times.

If there are distinct rates of interest for distinct time periods

Rate for 1st t_1 years $\rightarrow R_1\%$
Rate for 2nd t_2 years $\rightarrow R_2\%$ $\longrightarrow$ Then, Total S.I. for 3 years $= \dfrac{P(R_1t_1 + R_2t_2 + R_3t_3)}{100}$
Rate for 3rd t_3 years $\rightarrow R_3\%$

1. A certain sum invested at 8 % p.a SI amounts to Rs.16896 in 4yrs . The sum is

   (a) Rs.13500   (b) Rs.14400   (c) Rs.12800   (d) Rs.1500

2. A sum of Rs.800 invested on SI becomes Rs.1200 in 8 years. What will be SI for 6yrs on the same sum and same rate of interest.

   (a) Rs.300   (b) Rs.450   (c) Rs.600   (d) Rs.355

3. Find the sum of money that will give Rs.1 as interest per day at the rate of 5% per annum simple interest.

(a) Rs.3650   (b) Rs.7300   (c) Rs.8250   (d) Rs.6500

4. The simple interest on a certain sum of money at 5% per annum for 3yrs and 4yrs differ by Rs.42. Find the sum of money.

(a) Rs.820   (b) Rs.208   (c) Rs.840   (d) Rs.480

5. A certain sum is lent at 4% p.a for 3yrs, 8% p.a for the next 4yrs and 12% p.a beyond 7yrs. If for these period of 11yrs the total interest obtained is Rs.27,600 then the sum lent was ?

(a) Rs.32000   (b) Rs.30000   (c) Rs.27000   (d) Rs.25000

6. Rohit borrowed Rs.1200 from his friend Amit on 22nd may 2025, at a rate of 12% p.a simple interest. If rohit paid back the money on 2 august 2025, find the interest paid by rohit to amit.

(a) Rs.300 (b) Rs.250 (c) Rs.330 (d) Rs. 150

Solution

Number of days from 22nd May 2025 to 2nd August 2025:

- May: $31 - 22 = 9$ days
- June: 30 days
- July: 31 days
- August: 2 days

Total $= 9 + 30 + 31 + 2 = 72$ days

$$\text{Time} = \frac{72}{365} \text{ years}$$

$$SI = \frac{P \times R \times T}{100} = \frac{1200 \times 12 \times 72}{100 \times 365} \approx Rs.\,28.44$$

7. Two equal sum were lent out at 7% and 5% simple interest per annum respectively. The interest earned on both the loans adds up to Rs.960 for 4 yrs. The total sum lent out was.

(a) Rs.3500   (b) Rs.2500   (c) Rs.2000   (d) Rs.3000

8. A certain sum becomes 5 times in 3yrs at simple interest, then in how many years it will become 12 times.

(a) 9yrs   (b) 15yrs   (c) 12yrs   (d) 6yrs

Question Based on finding rate of interest

9. A certain sum at SI becomes 6 times of itself in 20yrs. Find the rate of interest

(a) 20%   (b) 25%   (c) 30%   (d) 33.33%

10.A sum of money invested at SI becomes 17/10 of itself in 2yrs 8months. What is the rate of interest per annum.

(a) 30%   (b) 25%   (c) 22%   (d) 28%

11. A man borrowed Rs.12000 from a bank at a rate of SI. After 4 months, Rs.6000 more was borrowed and the rate of interest on the total principal was doubled than that of previous rate. At end of the year Rs.2800 was paid as interest. Find the rate of interest that was applicable initially.

(a) 10%   (b) 12.5%   (c) 18%   (d) 16.66%

Question Based on finding time

12.(a) In how much time will a sum of Rs.5250 amounts to Rs.9870 at the rate of 11 percent per annum at simple interest?

  (a) 8yrs   (b) 14yrs   (c) 2yrs   (d) 15yrs

(b) In how many years will a sum becomes 12times of itself at 44% p.a rate of simple interest.

  (a) 15yrs   (b) 22yrs   (c) 25yrs   (d) 12yrs

Equal interest

13. A sum of Rs.27000 is divided into two parts A and B such that SI at the rate of 15% on A and B after 2yrs and 4yrs respectively is equal. The total interest received by A & B together is

(a) Rs. 11000   (b) Rs.10500   (c) Rs.10800   (d) Rs.11200

14. A person invests money in three different schemes for 6yrs, 10yrs and 12yrs at rate of 10%, 12% and 15% simple interest respectively. At the maturity of each schemes he gets equal interest from all three schemes. Find the ratio of his investments.

(a) 2:3:6   (b) 3:4:2   (c) 3:4:6   (d) 6:3:2

Sum of Interests

15. Subhodeep lends 40% of an amount at 15% p.a. 50% of the remaining amount at 10% p.a and rest at 18% p.a rate of interest at SI. What would be the rate of interest if the interest is calculated on the whole amount.

    (a) 14.4% p.a   (b) 16.6% p.a   (c) 12.25% p.a   (d) 13.33% p.a

16. A lent Rs.5000 to B for 2yrs and Rs.3000 to C for 4yrs on SI at same rate of interest and received Rs.2200 as total interest. Find the rate of interest per annum.

(a) 12%   (b) 10%   (c) 11.11%   (d) 13.5%

17. The sum invested by Shreya in scheme B is double the sum invested in scheme A. Investment in scheme A is made for a period of 3yrs at 8% p.a SI and in scheme B for a period of 2yrs at 9% p.a SI. The total interest obtained from both the schemes is Rs.1800. How much money was invested by Shreya in scheme B.

   (a) Rs.8000   (b) Rs.6000   (c) Rs.7000   (d) Rs.6600