Simple Interest Questions for CDS, CLAT and SSC Exams.

Simple Interest Quiz 4

Directions: Kindly study the following Questions carefully and choose the right answer:

1. S.I for a sum of 1550 for 2 years rupees 20 more than the S.I for 1450 for the same duration. Find the rate of interest.

A. 5% B. 10% C. 15% D. 24%

2. In a certain time, a sum becomes 3 times at the rate of 5% per annum. At what rate of interest the same sum becomes 6 times in same duration?

A. 7% B. 9% C. 12.5% D. 17%

3. At what rate per cent per annum calculated in simple interest will a sum of money double in 10 year?

A. 10% B. 12% C. 12.5% D. 13.5%

4. A sum of money lent on simple interest triples itself in 15 years and 6 months. In how many years will it be doubled?

A. 6 yr 3 months B. 7 yr 9 months C. 8 yr 3 months D. 9 yr 6 months

5. A sum of money becomes 3 times in 5 year. In how many year will be the same sum become 6 times at the same rate of simple interest?

A. 15 year B. 12.5 year C. 10 year D. 7.5 year

6. The principal on which a simple interest of Rs. 55 will be obtained after 9 months at the rate of 11/3% per annum is

A. Rs. 1000 B. Rs. 1500 C. Rs. 2000 D. Rs. 2500

7. At what rate per cent per annum simple interest will a sum of money triple itself in 25 year?

A. 8% B. 9% C. 10% D. 12%

8. If x, y, z are three such sums of money that y is the simple interest on x and z is the simple interest on y for the same time and at the same rate of interest, then we have

A. $z^2 = xy$ B. $xyz = 1$ C. $x^2 = yz$ D. $y^2 = zx$

9. The difference between simple interest and the true discount on Rs. 2400 due 4 years hence at 5% per annum simple interest is

A. Rs. 30 B. Rs. 80 C. Rs. 50 D. Rs. 70

10. A man buys a TV prices at Rs. 16000. He pays Rs. 4000 at once and the rest after 15 months on which he is charged a simple interest at the rate of 12% per year. The total amount he pays for the TV is

A. Rs. 18,200 B. Rs. 17,800 C. Rs.17,200 D. Rs. 16,800

Correct Answers:

1	2	3	4	5	6	7	8	9	10
B	C	A	B	B	C	A	D	B	B

Explanations:

1. According to question, we get
S.I. on 1550 – S.I. on 1450 = 20

$$\frac{1550 \times R \times 2}{100} - \frac{1450 \times R \times 2}{100} = 20$$

$$\frac{100 \times R \times 2}{100} = 20$$

R = 10%.
Hence, option B is correct.

2. To solve this question we can apply a short trick approach,

Net percent rate (r_2) = $\left(\frac{y-1}{x-1}\right) \times r_1$

Where:
x is the no. of times the sum becomes of itself in the 1st scenario = **3**
y is the no. of times the sum becomes of itself in the 1st scenario = **6**
r_1 is the rate of interest in the 1st scenario = **5%**
r_2 is the rate of interest in the 2nd scenario = **?**
By the short trick approach, we get

Required rate percent (r_2) = $\left(\frac{6-1}{3-1}\right) \times 5 = \frac{25}{2} = 12.5\%$

Detailed Method:
Amount = P + S.I.
3P = P + S.I; S.I = 2P
i.e. if Amount = 6P then S.I = 5P

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

$$2P = \frac{P \times R \times T}{100}$$

$$T = \frac{200}{5}$$

$$5P = \frac{P \times R \times 200}{100 \times 5}$$

$$R = \frac{25}{2}\% = 12.5\%$$

Hence, option C is correct.

3. Let principal = x, then amount = 2x

$\therefore$ SI = A – P = 2x – x = x

$\because$ $SI = \frac{P \times R \times T}{100} \Rightarrow x = \frac{x \times r \times 10}{100} \Rightarrow \therefore r = 10\%$.

Hence, option A is correct.

4. To solve this question we can apply a short trick approach,

Required time $(t_2) = \left(\frac{x-1}{y-1}\right) \times t_1$

Where **x** is the no. of times the sum becomes of itself in the 2nd scenario = 2
y is the no. of times the sum becomes of itself in the 1st scenario = 3
t is the time taken in the 1st scenario = 15 yr 6 months = $\frac{31}{2}$ yr
t_2 is the time taken in the 1st scenario = **?**
By the short trick approach, we get

Required time $(t_2) = \left(\frac{2-1}{3-1}\right) \times \frac{31}{2} = \frac{31}{4}$ = 7 yr 9 months.

Detailed Method:

Let initial amount be Rs. P, then A = Rs. 3P and T = 15 yr and 6 months = $\frac{31}{2}$ yr

SI = A – P = Rs. 2P

$\Rightarrow P \times \frac{31}{2} \times \frac{r}{100} = 2P \Rightarrow r = \frac{2 \times 2 \times 100}{31} = \frac{400}{31}$

Let amount doubled in t_1 year.

$\Rightarrow t_1 = \frac{SI \times 100}{P \times r} \Rightarrow t_1 = \frac{P \times 100 \times 31}{P \times 400} = \frac{31}{4}$ = 7 yr and 9 months.

Hence, option B is correct.

5. To solve this question we can apply a short trick approach,

Required time (t_2) = $\left[\left(\frac{y-1}{x-1}\right) \times t_1\right]$ years.

Where:
x is the no. of times the sum becomes of itself in the 1st scenario = **3**
y is the no. of times the sum becomes of itself in the 2nd scenario = **6**
$\mathbf{t_1}$ is the time taken in the 1st scenario = **5 yr**
$\mathbf{t_2}$ is the time taken in the 2nd scenario = **?**
By the short trick approach, we get

Required time (t_2) = $\left[\left(\frac{6-1}{3-1}\right) \times 5\right] = \frac{25}{2}$ = 12.5 yrs.

Hence, option B is correct.

6. Let P be the principal.
Given that, SI = Rs. 55,

time (t) = 9 months = $\frac{9}{12}$ yr and rate(r) = $\frac{11}{3}$%

$SI = \frac{P \times r \times t}{100}$

$\Rightarrow P = \frac{SI \times 100}{r \times t} = \frac{55 \times 100}{11 \times 9} \times 3 \times 12$

$= 5 \times 100 \times 4 = 2000$

$\therefore$ Principal (P) = Rs. 2000.

Hence, option C is correct.

7. Let principal amount = P

As amount = 3P, t = 25 year

SI = 3P – P = 2P

$\because$ Rate = $\frac{100 \times SI}{P \times 25} = \frac{100 \times 2P}{P \times 25}$ = 8%.

Hence, option A is correct.

8.

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

$\therefore \quad y = \frac{x \times R \times T}{100}$ **...(i)**

$\therefore \quad z = \frac{y \times R \times T}{100}$ **...(ii)**

On dividing eqn. (i) by (ii) we get,

$\therefore \quad \frac{y}{z} = \frac{x}{y} \Rightarrow y^2 = zx.$

Hence, option D is correct.

9. To solve this questions we can apply a short trick approach

Amount (A) = 2400/-, Rate of interest (R) = 5%, Time (T) = 4 yrs

$SI - TD = \frac{A(R \times T)^2}{100(100 + R \times T)}$

$= \frac{2400 \times (5 \times 4)^2}{100(100 + 5 \times 4)}$

$= \frac{2400 \times 20 \times 20}{100 \times 120} = 80/-$

Hence, option B is correct.

10. Given,

P = 16000 – 4000 = 12000, r = 12%

t = 15 months = $\frac{15}{12}$ yrs

$SI = \frac{12000 \times 12 \times (15/12)}{100} = \frac{12000 \times 12 \times 15}{100 \times 12} = 1800$

Total amount = 16000 + 1800 = 17800/-

Hence, option B is correct.