Simple Interest

Exercise 42:

Solution 1:

S. No	Principal (Rs.)	Interest (Rs.)	Amount (Rs.)
1	1260	126	(1260 + 126) = 1386
2	1310	(1520 - 1310) = 210	1520
3	(1972 - 632) = 1340	632	1972

Exercise 43:

Solution 1:

P = Rs. 10000

R = 11 p.c.p.a.

N = 5 years

$$\text{Interest, } I = \frac{P \times R \times N}{100} = \frac{10000 \times 11 \times 5}{100} = 5500$$

∴ Simple interest = Rs. 5500

Solution 2:

P = Rs. 3500

R = 7 p.c.p.a.

$$N = 2\frac{1}{2} = \frac{5}{2} \text{ years}$$

$$\text{Interest, } I = \frac{P \times R \times N}{100} = \frac{3500 \times 7 \times \frac{5}{2}}{100} = 612.50$$

∴ Simple interest = Rs. 612.50

Solution 3:

P = Rs. 1200
R = 9 p.c.p.a.
N = 4 years

$$I = \frac{P \times R \times N}{100} = \frac{1200 \times 9 \times 4}{100} = 432$$

Amount at the end of the period = P + I = Rs. (1200 + 432) = Rs. 1632
∴ Amount at the end of the period is Rs. 1632.

Solution 4:

P = Rs. 11,000
R = 10 p.c.p.a
N = 2 years

$$I = \frac{P \times R \times N}{100} = \frac{11,000 \times 10 \times 2}{100} = 2200$$

Mohan gets Rs. 2200 as simple interest at the end of 2 years.

Solution 5:

(1) P = Rs. 700, R = 5 p.c.p.a., N = 6 years

$$I = \frac{P \times R \times N}{100} = \frac{700 \times 5 \times 6}{100} = 210$$

(2) P = Rs. 1800, R = 9 p.c.p.a., $N = 7\frac{1}{2} = \frac{15}{2}$ years

$$I = \frac{P \times R \times N}{100} = \frac{1800 \times 9 \times \frac{15}{2}}{100} = 1215$$

(3) P = Rs. 12,000, $R = 5\frac{1}{2} = \frac{11}{2}$ p.c.p.a., N = 4 years

$$I = \frac{P \times R \times N}{100} = \frac{12000 \times \frac{11}{2} \times 4}{100} = 2640$$

(4) P = Rs. 15, 500, $R = 7\frac{1}{2} = \frac{15}{2}$ p.c.p.a., N = 2 years

$$I = \frac{P \times R \times N}{100} = \frac{15500 \times \frac{15}{2} \times 2}{100} = 2325$$

(5) P = Rs. 10, 500, $R = 6\frac{1}{2} = \frac{13}{2}$ p.c.p.a., $N = 5\frac{1}{2} = \frac{11}{2}$ years

$$I = \frac{P \times R \times N}{100} = \frac{10500 \times \frac{13}{2} \times \frac{11}{2}}{100} = 3753.75$$

Exercise 44:

Solution 1:

(1) P = Rs.500, R = 6 p.cp.a., N = 7 years

$\therefore I = \frac{P \times R \times N}{100} = \frac{500 \times 6 \times 7}{100}$ = Rs. 210

(2) R = 9 p.cp.a., N = 8 years, I = 8640

$I = \frac{P \times R \times N}{100}$

$\therefore 8640 = \frac{P \times 9 \times 8}{100}$

$\therefore 8640 \times 100 = P \times 9 \times 8$

$\therefore P = \frac{8640 \times 100}{9 \times 8}$ = Rs. 12,000

(3) P = Rs.9000, R = 5 p.cp.a., I = 2475

$I = \frac{P \times R \times N}{100}$

$\therefore 2475 = \frac{9000 \times 5 \times N}{100}$

$\therefore 2475 = 90 \times N \times 5$

$\therefore N = \frac{2475}{90 \times 5} = \frac{11}{2} = 5\frac{1}{2}$ = 5.5 years

(4) P = Rs.11000, N = 6 years, I = 2640

$I = \frac{P \times R \times N}{100}$

$\therefore 2640 = \frac{11000 \times R \times 6}{100}$

$\therefore 2640 = 110 \times R \times 6$

$\therefore R = \frac{2640}{110 \times 6}$ = 4 p.cp.a

Solution 2:

P = Rs.8000

R = 7 p.cp.a.

N = 5 years

$I = \frac{P \times R \times N}{100} = \frac{8000 \times 7 \times 5}{100} = 2800$

$\therefore$ Simple interest = Rs.2800

Solution 3:

P = Rs. 5000

N = 4 years

I = Rs. 1600

$$I = \frac{P \times R \times N}{100}$$

$$\therefore 1600 = \frac{5000 \times R \times 4}{100}$$

$$\therefore 1600 = 50 \times R \times 4$$

$$\therefore R = \frac{1600}{50 \times 4} = 8$$

∴ Rate of simple interest = 8 p.c.p.a.

Solution 4:

P = Rs. 13, 000

R = 9 p.c.p.a.

I = Rs. 1170

$$I = \frac{P \times R \times N}{100}$$

$$\therefore 1170 = \frac{13000 \times 9 \times N}{100}$$

$$\therefore 1170 = 130 \times 9 \times N$$

$$\therefore N = \frac{1170}{130 \times 9} = 1$$

The period of deposit is 1 year.

Solution 5:

R = 10 p.c.p.a.

I = Rs. 10, 250

$$N = 2\frac{1}{2} = \frac{5}{2} \text{ years}$$

$$I = \frac{P \times R \times N}{100}$$

$$\therefore 10250 = \frac{P \times 10 \times \frac{5}{2}}{100}$$

$$\therefore P = \frac{10250 \times 100 \times 2}{10 \times 5}$$

∴ P = Rs. 41, 000

Thus, the sum borrowed is Rs. 41, 000.