

According to the question

49 unit = 24.50

1 unit = 0.5

10000 unit = 10000 x 0.5 = 5000

Alternate :

Difference between CI and SI =

$$\frac{R^2}{100} \% \text{ of Principal}$$

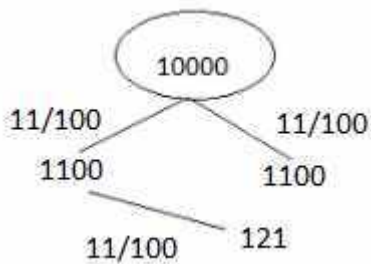
$$\Rightarrow 24.5 = \frac{7^2}{100} \% \text{ of X}$$

$$\Rightarrow X = 5000$$

Sol 11. (c)

$$11\% = \frac{11}{100}$$

Let $X = 100^2 = 10000 \text{ unit}$



According to the question

121 unit = 60.50

1 unit = 0.5

10000 unit = 10000 x 0.5 = 5000

Alternate :

Difference between CI and SI =

$$\frac{R^2}{100} \% \text{ of Principal}$$

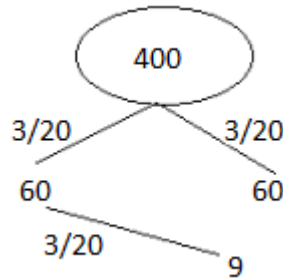
$$\Rightarrow 60.5 = \frac{11^2}{100} \% \text{ of X}$$

$$\Rightarrow X = 5000$$

Sol 12. (b)

$$15\% = \frac{3}{20}$$

Let $X = 20^2 = 400 \text{ unit}$



According to the question

9 unit = 9

1 unit = 1

400 unit = 400 x 1 = 400

Alternate :

Difference between CI and SI =

$$\frac{R^2}{100} \% \text{ of Principal}$$

$$\Rightarrow 9 = \frac{15^2}{100} \% \text{ of X}$$

$$\Rightarrow X = 400$$

Sol 13. (b)

$$\text{Rate of interest} = \left[\left(\frac{\text{Amount}}{\text{Principle}} \right)^{\frac{1}{t}} - 1 \right]$$

] x 100

Where t = time interval

$$= \left(\frac{2409}{2190} \right)^{\frac{1}{3}} - 1 \text{] x } 100 =$$

10%

Sol 14. (b)

$$\text{Rate of interest} = \left[\left(\frac{\text{Amount}}{\text{Principle}} \right)^{\frac{1}{t}} - 1 \right]$$

] x 100

Where t = time interval

$$= \left(\frac{8748}{7500} \right)^{\frac{1}{2}} - 1 \text{] x } 100 = 8\%$$

New rate of interest = 8 x 2 = 16%

Desired Simple Interest =

$$\frac{7500 \times 16 \times 23}{5 \times 100} = 5520$$

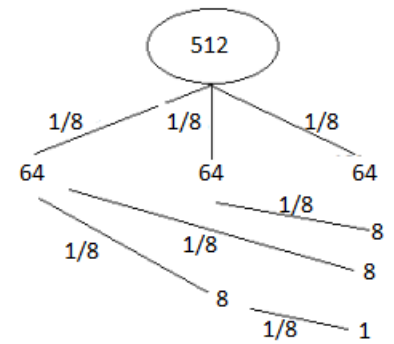
Sol 15.(b)

Since interest is compounded 10 monthly, effective rate of interest = $15 \times \frac{10}{12} = \frac{50}{4} \%$ and effective

time period = $\frac{5}{2} \times \frac{12}{10} = 3 \text{ years}$

Now, $\frac{50}{4} \% = \frac{1}{8}$

Let the principal = $8^3 = 512$



Interest earned =

$$64+64+64+8+8+8+1 = 217$$

Now,

512 unit = 4096

1 unit = 8

217 unit = 1736

Alternate :

$$\frac{50}{4} \% = \frac{1}{8}$$

Principal Amount

8	-----	9
8	-----	9
8	-----	9

$$\underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$$

512 729

According to the question

512 unit = 4096

1 unit = 8

(729-512) unit = 217 x 8 = 1736

Sol 16. (a)

$$\text{Rate of interest} = \left[\left(\frac{\text{Amount}}{\text{Principle}} \right)^{\frac{1}{t}} - 1 \right]$$

] x 100

Where t = time interval

$$= \left[\left(\frac{11664}{10000} \right)^{\frac{1}{2}} - 1 \right] \text{ x } 100 = 8\%$$

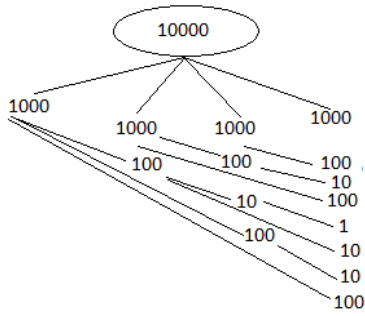
Desired Simple Interest =

$$\frac{10000 \times 8 \times 27}{5 \times 100} = 4320$$

Sol 17. (b)

$$10\% = \frac{1}{10}$$

Let the principal = $10^4 = 10000$



Total interest earned
 = 1000+1000+100+1000+100+100
 +10+1000+100+10+100+1+10+1
 0+100 = 4641 unit

According to the question
 (10000+4641) unit = 29282
 1 unit = 2
 10000 unit = 20000
 Desired Simple Interest =
 $\frac{20000 \times 10 \times 4}{100} = 8000$

Alternate :

10% = $\frac{1}{10}$
 10 ----- 11
 10 ----- 11
 10 ----- 11
 10 ----- 11
 10 ----- 11

10000 ---- 14641

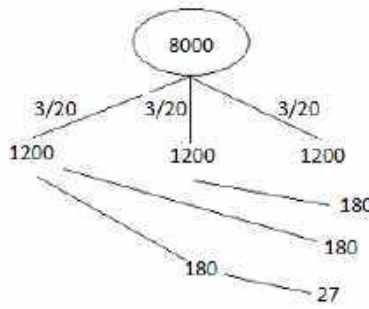
According to the question

14641 = 29282
 1 unit = 2
 10000 unit = 20000
 Let the principal = 10 unit and
 interest earned in one year = 1
 unit
 ⇒ Interest earned in 4 years = 4
 unit

Now,
 10 unit = 20000
 1 unit = 2000
 4 unit = 8000

Sol 18. (d)

15% = $\frac{3}{20}$
 Let the principal = $20^3 = 8000$



Interest earned =
 1200+1200+180+1200+180+180+
 27 = 4167 unit

According to the question
 4167 unit = 4167
 1 unit = 1
 8000 unit = 8000
 Desired Simple Interest =
 $\frac{8000 \times 15 \times 24}{5 \times 100} = 5760$

Alternate :

15% = $\frac{3}{20}$
 20 ----- 23
 20 ----- 23
 20 ----- 23

8000 ----- 12167

According to the question

(12167-8000) unit = 4167
 1 unit = 1
 8000 unit = 8000
 Let the principal = 20 unit and
 interest earned in one year = 3
 unit
 ⇒ Interest earned in $\frac{24}{5}$ years =

14.4 unit
 Now,
 20 unit = 8000
 1 unit = 400
 14.4 unit = 5760

Sol 19. (a)

Let the amount after 3 years =
 10000
 ⇒ the amount after 5 years =
 11881

Rate of interest = $[(\frac{Amount}{Principle})^t - 1]$
] x 100
 Where t = time interval
 = $(\frac{11881}{10000})^{\frac{1}{2}} - 1$] x 100 =

9%

Sol 20. (c)

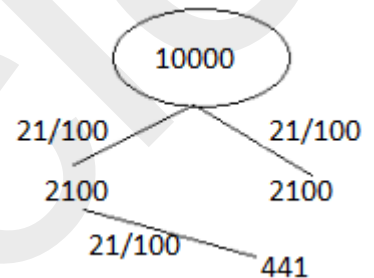
Let the amount after 2 years =
 1000000
 ⇒ the amount after 5 years =
 1191016

Rate of interest = $[(\frac{Amount}{Principle})^t - 1]$
] x 100

Where t = time interval
 = $(\frac{1191016}{1000000})^{\frac{1}{3}} - 1$] x 100 =
 6%

Sol 21. (d)

21% = $\frac{21}{100}$
 Let the CP = $100^2 = 10000$ unit



Compound Interest earned =
 2100+2100+441= 4641
 Simple interest earned =
 2100+2100 = 4200
 According to the question
 4641 unit = 11602.5
 1 unit = 2.5
 4200 unit = 4200 x 2.5 = 10500

Alternate :

21% = $\frac{21}{100}$
 100 ----- 121
 100 ----- 121

10000 ----- 14641

According to the question
 (14641-10000) unit = 11602.5

1 unit = 2.5
 10000 unit = 25000
 Let the principal = 100 unit and
 interest earned in one year = 21
 unit
 ⇒ Interest earned in 2 years = 42
 unit

Now,
 100 unit = 25000