Simple and Compound Interest

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**Chapter : Simple and Compound Interest**

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<td>(a) 4000</td>
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<td>(2) The difference of compound interest and simple interest for 3 years and for 2 years are in ratio 23 : 7 respectively. What is rate of interest per annum (in %)?</td>
<td>(a) 6</td>
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<td>(3) The simple interest on a sum of money for 10 years Rs 3130. If the principal becomes 5 times after 5 years, then what will be the total interest (in Rs) obtained after 10 years?</td>
<td>(a) 6260</td>
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<td>(4) A sum of Rs 720 amounts to Rs 882 at simple interest in 1 $\frac{1}{2}$ years. In how many years will the sum Rs 800 amounts to Rs 1040 at the same rate?</td>
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<td>(5) The simple and compound interest that can be earned in two years at the same rate is Rs 1,000 and Rs 1,040 respectively. What is the rate (percent per annum) of interest?</td>
<td>(a) 3</td>
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<td>(6) Simple Interest received by a person in 10 years on a principal of Rs 9500 is 130% of the principal. What is the rate of interest (in %) per annum?</td>
<td>(a) 800</td>
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<td>(7) What is the compound interest (in Rs) for 1 year on a sum of Rs 20000 at the rate of 40% per annum compounding half yearly?</td>
<td>(a) 8000</td>
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<td>(8) A person lent Rs 10000 to B for 3 years and Rs 6000 to C for 4 years on simple interest at same rate of interest and received Rs 5400 in all from both of them as interest. What is the rate of interest (in %)?</td>
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(9) A sum of Rs 400 becomes Rs 448 at simple interest in 2 years. In how many years will the sum of Rs 550 amounts to Rs 682 at the same rate?

400 Rs. is a 1st year of Rs 448. Rs. 682 Rs. is the 2nd year of Rs 550. The rate of interest is the same.

\[ \text{Rate of Interest} = \frac{(682 - 550)}{550 \times 2} \times 100 = \frac{132}{550 \times 2} \times 100 = \frac{132}{1100} \times 100 = 12\% \text{ per annum} \]

The difference between the compound interest and simple interest in all three schemes. What is the money (in Rs)?

SCCGL2017-10AUG-S3 : 60
(a) 2 (b) 3 (c) 3.5 (d) 4

(10) A person invested a total sum of Rs 7900 in three different schemes of simple interest at 3%, 5% and 8% per annum. At the end of one year, he got the same interest in all three schemes. What is the money (in Rs) invested at 3%?

[Details of the options are not provided]

The difference between compound interest and simple interest for 1st year?

1 year at simple interest, then what will be the yearly rate of interest?

(11) If a certain sum of money doubles itself in 7 years, then what will be the rate of interest?

(12) A, B and C invested amounts in the ratio 3 : 4 : 5 respectively. If the schemes offered compound interest at the rate of 20% per annum, 15% per annum and 10% per annum respectively, then what will be the ratio of their amounts after 1 year?

A, B and C together invested in the ratio of 3 : 4 : 5. The rate of interest is 20% per annum, 15% per annum and 10% per annum respectively.

(13) The difference between the compound interest compounded half yearly for 1 year and the simple interest for 1 year on a certain sum of money lent out at 8% per annum is Rs 64. What is the sum (in Rs)?

1 year at compound interest compounded half yearly for 1 year and the simple interest for 1 year on a certain sum of money lent out at 8% per annum is Rs 64. What is the sum (in Rs)?

SCCGL2017-10AUG-S3 : 60
(a) 2 (b) 3 (c) 3.5 (d) 4

(14) If Rs 2500 becomes to Rs 2970.25 in 2 years at compound interest compounded annually, then what is the yearly rate of interest (in %)?

If Rs 2500 becomes to Rs 2970.25 in 2 years at compound interest compounded annually, then what is the yearly rate of interest (in %)?

SCCGL2017-09AUG-S1 : 60
(a) 40000 (b) 42000 (c) 44000 (d) 44800

(15) For an amount, simple interest at the rate of interest of 12% per annum for 6 years is Rs 25920. What is the sum (in Rs)?

For an amount, simple interest at the rate of 12% per annum for 6 years is Rs 25920. What is the sum (in Rs)?

SCCGL2017-09AUG-S2 : 60
(a) 7 (b) 9 (c) 11 (d) 13

(16) If a certain sum of money doubles itself in 7 years at simple interest, then what will be the yearly rate of interest (in %)?

If a certain sum of money doubles itself in 7 years at simple interest, then what will be the yearly rate of interest (in %)?

SCCGL2017-11AUG-S1 : 60
(a) 4326.3 (b) 5563.4 (c) 5888.6 (d) 5990.4

(17) The difference between compound interest and simple interest on a sum for 2 year at 20% per annum is Rs 200. If the interest is compounded half yearly, then what is the difference (in Rs) between compound and simple interest for 1 year?

The difference between compound interest and simple interest on a sum for 2 year at 20% per annum is Rs 200. If the interest is compounded half yearly, then what is the difference (in Rs) between compound and simple interest for 1 year?

SCCGL2017-11AUG-S2 : 60
(a) 18 (b) 13 (c) 26 (d) 30
(18) If a certain sum of money become thrice of itself in 5 years 4 months at simple interest, then what will be the yearly rate of interest (in %)?

If Rohan has lent a certain sum of money (Rs) and it amounts to Rs 500 more than the sum lent. What is the value of principal (in Rs)?

SCCG2017-12AUG-S2 : 60
(a) 18.75 (b) 27.5 (c) 37.5 (d) 42.25

(19) A certain sum of money amounts to Rs 918 in 2 years and Rs 969 in 3.5 years at simple interest. What is the rate of interest (in %)?

If a sum amounts to Rs 7727.104 at the rate of 12% per annum compounded annually after three years. What is the value of principal (in Rs)?

SCCG2017-09AUG-S3 : 60
(a) 4 (b) 5 (c) 6 (d) 8

(20) A sum amounts to Rs 7727.104 at the rate of 12% per annum compounded annually after three years. What is the value of principal (in Rs)?

If a sum amounts to Rs 7727.104 at the rate of 12% per annum compounded annually after three years. What is the value of principal (in Rs)?

SCCG2017-16AUG-S1 : 60
(a) 5000 (b) 5200 (c) 5350 (d) 5500

(21) A person lent certain sum of money at 10% per annum simple interest. In 20 years the interest amounted to Rs 500 more than the sum lent. What was the sum lent (in Rs)?

If a sum amounts to Rs 7727.104 at the rate of 12% per annum compounded annually after three years. What is the value of principal (in Rs)?

SCCG2017-16AUG-S2 : 60
(a) 200 (b) 500 (c) 1000 (d) 250

(22) Rohan borrowed a certain sum of money at simple interest. Rate of interest was 3% per annum for first 3 years, 4% per annum for next 5 years and 6% per annum for next 7 years. If he paid Rs 2059 as interest, then what is the sum borrowed (in Rs)?

Roheen had lent a certain sum of money (Rs) and it amounted to Rs 500 more than the sum lent. What is the value of principal (in Rs)?

SCCG2017-16AUG-S3 : 60
(a) 8 (b) 10 (c) 12 (d) 5

(23) If the amount received at the end of 2nd and 3rd year as Compound Interest on a certain Principal is Rs 2100, and Rs 2268 respectively, what is the rate (in %) of interest?

If in 2 years at simple interest the principal increases by 18%, what will be the compound interest (in Rs) earned on Rs 7000 in 3 years at the same rate?

SCCG2017-17AUG-S2 : 60
(a) 7 (b) 8 (c) 9 (d) 10

(24) If in 2 years at simple interest the principal increases by 18%, what will be the compound interest (in Rs) earned on Rs 7000 in 3 years at the same rate?

If in 2 years at simple interest the principal increases by 18%, what will be the compound interest (in Rs) earned on Rs 7000 in 3 years at the same rate?

SCCG2017-17AUG-S3 : 60
(a) 1865.2 (b) 2065.2 (c) 1965.2 (d) 1765.2

(25) The simple and compound interest that can be earned in two years at the same rate is Rs 1500 and Rs 1575 respectively. What is the rate (% per annum) of interest?

If the amount received at the end of 2nd and 3rd year as Compound Interest on a certain Principal is Rs 2100, and Rs 2268 respectively, what is the rate (in %) of interest?

SCCG2017-18AUG-S1 : 60
(a) 8 (b) 10 (c) 12 (d) 5

(26) If compound interest received on a certain amount in the 2nd year is Rs 1200, what will be the compound interest (in Rs) for the 4th year on the same amount at 10% rate of interest?

If in 2 years at simple interest the principal increases by 18%, what will be the compound interest (in Rs) earned on Rs 7000 in 3 years at the same rate?

SCCG2017-18AUG-S2 : 60
(a) 2065.2 (b) 2065.2 (c) 1965.2 (d) 1765.2
1200 रु. है, तो उसी राशि पर 10% ब्याज दर से चार साल का
चक्रवृद्धि ब्याज (र. में) कितना होगा?
**SCCGL2017-18AUG-SZ : 60**
(a) 1452 (b) 1320 (c) 1552 (d) 1420

(27) The compound interest earned in two years at
15% per annum is Rs 20640. What is the sum invested
(in Rs)?
दो वर्षों में 15% प्रतिवर्ष की दर से अर्जित चक्रवृद्धि ब्याज
20640 रु. है। निवेश की गई राशि (र. में) कितनी है?
**SCCGL2017-18AUG-S3 : 60**
(a) 64000 (b) 60000 (c) 56000 (d) 52000

(28) Ganesh invested an amount of Rs x in a fixed
deposit scheme offering 5% per annum for 1st year
and 15% per annum for 2nd year and received an
amount of Rs 9660 after two years. What is the value
of x (in Rs)?
गणेश ने एक निश्चित जमा योजना में x रुपये की राशि की। वर्ष
के लिए 5% प्रति वर्ष की दर से और दूसरे वर्ष के लिए 15% प्रति
वर्ष की दर से निवेश किया और दो साल बाद 9660 रु की राशि
प्राप्त की। x (र. में) का मान कितना होगा?
**SCCGL2017-19AUG-S1 : 60**
(a) 9000 (b) 8000 (c) 85000 (d) 8200

(29) If the amount received at 10% per annum
Compound interest after 3 yrs is Rs 19965, then what
will have been the principal (in Rs) amount?
यदि 3 वर्ष बाद 10% प्रति वर्ष चक्रवृद्धि ब्याज पर प्राप्त राशि
19965 रु. है। तो मूलधन राशि (र. में) क्या रही होगी?
**SCCGL2017-19AUG-S2 : 60**
(a) 16000 (b) 15000 (c) 17000 (d) 18000

(30) An amount fetched a total simple interest of Rs. 3200
at the rate of 6.25 %/yr in 4 years. What is the amount
(in Rs)?
एक राशि 4 साल में 6.25% वर्ष की दर से 3200 रु. का एक
साधारण ब्याज प्राप्त किया। वह राशि (र. में) कितनी होगी?
**SCCGL2017-19AUG-S3 : 60**
(a) 13800 (b) 11800 (c) 12800 (d) 14800

(31) If in 3 years at simple interest the principal
increases by 18%, what will be the compound interest
(in Rs) earned on Rs. 25,000 in 3 years at the same
rate?
यदि 3 वर्षों में साधारण ब्याज पर मूलधन 18% से बढ़ जाता है,
तो उसी दर पर 3 साल में 25,000 रु. परअर्जित चक्रवृद्धि ब्याज
(र. में) क्या होगा?
**SCCGL2017-20AUG-S1 : 60**
(a) 4775.4 (b) 5774.4 (c) 4557.4 (d) 5575.4

(32) At what rate of compound interest (in %) per
annum will a sum of Rs. 15,000 become Rs. 18,150 in 2
years?
प्रति वर्ष चक्रवृद्धि ब्याज के किस दर (% में) से 2 साल में 15,000
रु. का राशि 18,150 रुपये हो जाएगी?
**SCCGL2017-20AUG-S2 : 60**
(a) 11 (b) 10 (c) 9 (d) 12

(33) In 4 years at simple interest the principal
increases by 32%. What will be the compound interest
earned (in Rs) on Rs. 24,000 in 3 years at the same
rate?
यदि 4 सालों में साधारण ब्याज पर मूलधन 32% से बढ़ जाता है,
तो उसी दर पर 3 साल में 24,000 रु पर अर्जित चक्रवृद्धि ब्याज
(र. में) क्या होगा?
**SCCGL2017-21AUG-S1 : 60**
(a) 5233 (b) 6332 (c) 5332 (d) 6233

(34) The amount received at 10% per annum
Compound interest after 3 yrs is Rs 5324. What was
the principal (in Rs)?
3 वर्ष के बाद 10% प्रति वर्ष चक्रवृद्धि ब्याज पर प्राप्त राशि
5324 रुपये है। मूलधन (रुपये में) क्या था?
**SCCGL2017-21AUG-S2 : 60**
(a) 4100 (b) 4200 (c) 4000 (d) 4300

(35) If compound interest received on a certain
amount in the 3rd year is Rs. 1,240, what will be the
compound interest (in Rs) for the 4th year on the
same amount at 9% rate of interest?
अगर एक निश्चित राशि पर तीसरे वर्ष में प्राप्त चक्रवृद्धि
ब्याज 1,240 रु. है, तो उसी राशि पर 9% ब्याज दर पर चार सालों
में प्राप्त चक्रवृद्धि ब्याज (र. में) क्या होगा?
**SCCGL2017-22AUG-S1 : 60**
(a) 1245.6 (b) 1521.6 (c) 1351.6 (d) 1220.6

(36) Albert invested an amount of x rupees in a fixed
deposit scheme offering 10% per annum for 1st year
and 15% per annum for 2nd year and received an
amount of Rs 20,240 after the two years. What is x (in Rs)?

The compound interest earned in two years at 12% per annum is Rs 10176. What is the sum (in Rs) invested?

1000 (a) 11800 (b) 16000 (c) 14000 (d) 18000

The simple and compound interest that can be earned in two years at the same rate is Rs 4000 and Rs 4180 respectively. What is the rate (percent per annum) of interest?

20,240 respectively, what is the rate of interest?

5% per annum is Rs 4160. What is the sum (in Rs)

(37) What is the difference (in Rs) between the compound interests on Rs. 1000 for 1 year at 10% per annum compounded yearly and half-yearly?

1000 (a) 3.5 (b) 0.5 (c) 2.5 (d) 1.5

A certain sum of money triples itself in 5 years at simple interest. In how many years it will be five times?

5 years (a) 15 (b) 8 (c) 10 (d) 12

amount of Rs 20,240 after the two years. What is x (in Rs)?

SCCGL2017-22AUG-S3 : 60

(a) 15000 (b) 16000 (c) 14000 (d) 18000

(38) The compound interest earned in two years at 8% per annum is Rs 4160. What is the sum (in Rs)

invested?

SCCGL2017-23AUG-S2 : 60

(a) 24000 (b) 25000 (c) 30000 (d) 20000

(39) A sum fetched a total simple interest of Rs.5,400 at the rate of 12.5% /yr in 4 years. What is the sum (in Rs)?

SCCGL2017-23AUG-S3 : 60

(a) 11800 (b) 12800 (c) 9800 (d) 10800

(40) A person lent certain sum of money at 5% per annum simple interest and in 15 years the interest amounted to Rs 250 less than the sum lent. What was the sum lent (in Rs)?

SCCGL2017-05AUG-S1 : 60

(a) 1000 (b) 1500 (c) 2400 (d) 3000

(41) The compound interest earned in two years at 12% per annum is Rs 10176. What is the sum (in Rs) invested?

12% per annum is Rs 10176. What is the sum (in Rs) invested?

SCCGL2017-06AUG-S1 : 60

(a) 50000 (b) 60000 (c) 40000 (d) 80000

(42) The simple and compound interest that can be earned in two years at the same rate is Rs 4000 and Rs 4180 respectively. What is the rate (percent per annum) of interest?

5% per annum is Rs 4160. What is the sum (in Rs)

invested?

SCCGL2017-06AUG-S3 : 60

(a) 18 (b) 4.5 (c) 9 (d) 1.2

(43) A certain sum of money triples itself in 5 years at simple interest. In how many years it will be five times?

20,240 respectively, what is the rate of interest?

SCCGL2017-08AUG-S1 : 60

(a) 5 (b) 8 (c) 10 (d) 15

(44) If the amount received at the end of 2nd and 3rd year at Compound Interest on a certain Principal is Rs 1,800, and Rs 1,926 respectively, what is the rate of interest?

SCCGL2017-20AUG-S3 : 60

(a) 7.5% (b) 7% (c) 6% (d) 6.5%

Answer Key

1  A2  A3  C4  B5  C
6  B7  D8  A9  D10  C
11  A12  C13  A14  B15  D
16  B17  A18  C19  A20  D
21  B22  C23  B24  B25  B
**Solution**

1. 
   \[ \text{SI} = \frac{p \times r \times t}{100} \]
   \[ 1200 = \frac{p \times 4 \times 7.5}{100} \]
   \[ p = 4000 \]

3. 
   \[ \frac{P \times r \times 10}{100} = 3130 \]
   \[ \frac{A/Q, (P \times r/100 \times 5) + (5P \times r/100 \times 5) = P \times r/100(5+25)}{3130 \times 30/100 = 9390} \]

4. 
   \[ P = 720, A = 882 \]
   \[ \therefore \text{Interest} = 882 - 720 = 162 \]
   \[ \text{Rate} = \frac{162 \times 100}{720 \times 3} = 15\% \]
   Now, \[ P = 800, A = 1040 \]
   \[ \therefore \text{S.I.} = 240 \]
   \[ \text{Rate} = 15\% \]
   \[ \therefore \text{time} = \frac{240 \times 100}{800 \times 15} = 2 \text{ years} \]

5. 
   Let the sum=Rs.100x and rate of interest=r\% 
   Time period=2 years 
   Simple interest=\( \frac{p \times r \times t}{100} \) 
   \[ 100 \times r \times 2/100 = 1000 \]
   \[ 2r = 1000 \]
   \[ X = 1000/2 = 500 \]
   Compound interest \( P(1+r/1000-t) \) \[ 100(1+r\times 1000+2r/100-1) \]
   \[ 100 \times 500/r((1+r/100)^2-2r/100) = 1040 \]
   \[ 5r + 1000 = 1040 \]

6. \[ 5r = 40 \]
   \[ R = 8\% \]

7. 
   \[ CI = 20,000 \left(1 + \frac{40}{200}\right)^2 - 20,000 \]
   \[ = 8800 \]

8. 
   \[ \frac{10000 \times 3 \times r}{100} + \frac{6000 \times 4 \times r}{100} = 5400 \]

Solving for r we get \( r = 10\% \)

9. 
   2 year interest = 448 - 400 = 48 
   1 year interest = 24 
   Rate = \[ \frac{24}{400 \times 100} = 6\% \]
   \[ 682 - 550 = 550 \times 6 \times t/100 \]
   \[ 1320 = 55 \times 6 \times t \]
   \[ t = 4 \text{ years} \]

10. 
    Let Amount x,y,z 
    Interest 
    \[ = \frac{3\% \times x}{5\% \times y} = \frac{8\% \times z}{K} \]
    \[ = k/3 : k/5 : k/8 \]
    \[ = 40 : 24 : 15 \]
    Money Invested at 3\% = \[ 40 / 79 \times 7900 = 4000 \text{Rs} \]

11. 
    In first case, \[ t = 1 \text{ year} \]
    \[ p = 4000 \]
    \[ r = 12\% \]
    \[ CI = P \left(1 + \frac{r}{100}\right)^t - P \]
    \[ = 4000 \left(1 + \frac{12}{100}\right)^1 - 4000 \]
    After solving 
    \[ = 480 \]
    In second case, 
    \[ t = 2, P = 4000, r = 6\% \]
    \[ CP = 4000 \left(\frac{53}{50} \times \frac{53}{50}\right) - 4000 \]
    After solving 
    \[ = 494.40 \]
    Different = 494.40 - 480 = 14.40

12. 
    Let amount invested by A, B and C be Rs. 300, 400 and 500 respectively for 1 year. 
    Amount under compound interest
\[ P \left(1 + \frac{r}{100}\right) \]
So A will get 360, B will get 460, and C will get 550.
Ratio of their amount is 360 : 460 : 550 or 36 : 46 : 55

(13)
Let the given sum be 100x
R = 8 and T = 1 year

\[ C I = \left[ P \left(1 + \frac{R}{100}\right)^n - 1 \right] \]
Solving we get, \[ 204x / 25 \]

\[ S I = \frac{P \times R \times T}{100} \]
Solving we get, \[ 8x \]

Difference between CI & SI
\[ (204x / 25) - (8x) = 64 \]
Solving for x we get 400, so value = 400 * 100 = 40000

(14)
Principal = 2500
Amount = 2970.25
\[ 2970.50 = 2500 \left(1 + \frac{\frac{r}{100}}{100}\right)^2 \]
\[ = 9\% \]

(15)
\[ p \times r \times t / 100 = 25920 \]
p = 36000

\[ C I = p \left[ \left(1 + \frac{r}{100}\right)^2 - 1 \right] \]
\[ = p \left[ \left(1 + \frac{8}{100}\right)^2 - 1 \right] \]
\[ = 36000 \left[ \frac{625}{625} - 1 \right] \]
\[ = 36000 \times \left[ \frac{624}{625} \right] \]
\[ = 36000 \times \frac{624}{625} \]
\[ = \text{Rs.} 5990.4 \]

(16)
Let principal be Rs. P.
And rate be R%.
According to Question
\[ P = \frac{x \times R \times 7}{100} \]
\[ R = \frac{100 \times 3/23}{3} = \frac{300}{23} \]
\[ R = 13.04\% \]

(17)
We know for 2 years,
\[ \text{Difference (d)} = \frac{P^2}{100^2} \quad \left[ P \rightarrow \text{principal} \right] \]
\[ r \rightarrow \text{rate} \]
\[ p = \frac{289}{100^2} = \text{Rs.} 5000 \]

Compound interest if compounded half yearly
\[ = \left(1 + \frac{\frac{r}{200}}{100}\right)^2 \]  \[ = 5000 \left[ \frac{101}{100} \right]^2 - 5000 \]
\[ C I = 6050 - 5000 = 1050 \]
Simple interest = \[ \frac{5000 \times 20 \times 1}{100} \]
\[ = 1000 \]
\[ \therefore \text{Required difference = 1050 - 1000 = Rs. 50} \]

(18)
Let principal be x
So interest = 2x
\[ 2x = \frac{1 \times 15 \times 15}{100} \]
\[ r = 37.5\% \]

(19)
Let the sum be P and simple interest of 1 year be SI.
According to Question
\[ P + 3.5 \text{SI} = 969 \quad \text{... (i)} \]
and \[ P + 2 \text{SI} = 918 \quad \text{... (ii)} \]
Subtract (ii) from (i)
\[ 1.5 \text{SI} = 51 \]
\[ \text{SI} = \text{Rs.} 34 \]
Put the value of SI any of eq\( ^n \)
\[ P + 2 \times 34 = 918 \]
\[ P = 918 - 68 \]
\[ P = \text{Rs.} 850 \]
Let the rate of interest be R%.
\[ \times 34 = \frac{850 \times 20 \times 1}{100} \]
\[ \Rightarrow R = 4\% \]

(20)
\[ 7727.104 = P \left(1 + \frac{12}{100}\right)^3 \]
\[ = P \left(\frac{28}{25}\right)^3 \]
\[ = \text{Rs.} 5500 \]

(21)
\[ SI = \frac{P \times R \times T}{100} \]
\[ \Rightarrow P + 500 = P \times 10 \times 20/100 \]
\[ P = 500 \]

(22)
Total Interest
\[ 3 \times 3 + 5 \times 4 + 7 \times 6 \]
\[ = 71\% \]
71% = 2059
1% = 29
100% = 2900

(23)
Difference of interest = 2268 – 2100 = 168
∴ P = 2100
T = 1 Year
Rate% = \frac{\text{Interest} \times 100}{P \times T} = \frac{168 \times 100}{2100 \times 1} = 8%

(24)
Let the principal be 100P
∴ 18P = 100P \times R \times 2/100
R = 9%
∴ Required
CI = 7000 \times \left[ (1 + \frac{9}{100})^3 - 1 \right]
= 7000 \times \left[ (1.09)^3 - 1 \right]
CI = 2065.2

(25)
In 1 year CI and SI is same = 750
CI for Rs 750 in 1 year = 75
Rate of interest = \frac{75}{750} \times 100 = 10%

(26)
Amount = 1200\left( 1 + \frac{16}{100} \right)^2
= 1200 \times 1.21
= Rs 1452

(27)
ATQ
Cl = p \left[ (1 + \frac{r}{100}) - 1 \right]
⇒ 20640 = p \left[ (1 + \frac{15}{100}) - 1 \right]
⇒ p = Rs 64000

(28)
We know for distinct ‘rates of interest for distinct time periods
A = P \left( 1 + r/100 \right) \left( 1 + r/100 \right)
⇒ 9660 = px \left( 1.05 \right) \times \left( 1.15 \right)
⇒ P = Rs 8000

(30)
ATQ
SI = \frac{px \times r \times t}{100}
3200 = 6.25 \times 4 \times P / 100
P = 12800

(31)
Let the sum invested at SI be ‘P’.
∴ 0.18P = \frac{P \times R \times 3}{100}
R = 6%
Now, CI earned on Rs 25000 for 3 years at 6% is
CL = 25000 \left[ (1 + 6/100)^3 - 1 \right]
= Rs 4775.4

(32)
We know that.
18150 = 15000 \left( 1 + \frac{r}{100} \right)^2
\frac{11}{10} = \frac{100 + r}{100} \implies \frac{r}{100} = \frac{11 - 10}{10}
⇒ r = 10%

(33)
Interest for one year = \frac{32}{4} = 8%
So, CI = p \left[ 1 + \left( \frac{r}{100} \right)^3 \right] - P
= 24000 \left[ \left( 1 + \frac{8}{100} \right)^3 - 1 \right]
= 24000 \left( \frac{108}{100} \times \frac{108}{100} \times \frac{108}{100} - 1 \right)
= 6233.08

(34)
Let the principal be ‘P’
ATQ \Rightarrow 5324 = P \left( 1 + \frac{10}{100} \right)^2
⇒ P = 5324 \times 1000/1331
⇒ P = Rs. 4000

(35)
Amount after 3 years = Rs. 1240
Rate of interest = 9%
∴ Amount after 4th year = 1240 + \frac{1240 \times 9 \times 1}{100} = Rs. 1351.6

(36)
ATQ
x \times \frac{110}{100} \times \frac{115}{100} = 20240
⇒ x = Rs 16000

(42)
\begin{array}{|c|c|c|}
\hline
\text{Year} & \text{SI} & \text{CI} \\
\hline
1^{\text{st}} year & 2000 & 2000 \\
2^{\text{nd}} year & 2000 & 2180 \\
\hline
\end{array}

Rate % = \frac{180}{2000} \times 100
= 9%

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