21- A sum of money amounts to Rs. 9800 after 5 years and Rs. 12005 after 8 years at the same rate of simple interest. The rate of interest per annum is:

- **A.**5%
- **B.**8%
- **C.**12%
- **D.**15%
- **E.**None of these

Answer & Explanation

Answer - **C** (12%)

Explanation -

S.I. for 3 years = Rs. (12005 - 9800) = Rs. 2205.

$$\text{S.I. for 5 years} = \text{Rs.} \frac{2205}{3} \times 5 = \text{Rs. } 3675.$$

Principal = Rs. (9800 - 3675) = Rs. 6125

$$\text{Hence, rate} = \frac{100 \times 3675}{6125 \times 5}\% = 12\%$$

22- A man invests a certain sum of money at 6% per annum simple interest and another sum at 7% per annum simple interest. His income from interest after 2 years was Rs. 354. One-forth of the first sum is equal to one-fifth of the second sum. The total sum invested was:

- **A.**2600
- **B.**2700
- **C.**2800
- **D.**2900
- **E.**None of these

Answer & Explanation

Answer - **B** (2700)

Explanation -

Let the sums be X and Y.

$$\frac{X \times 6 \times 2}{100} + \frac{y \times 7 \times 2}{100} = 354 \text{ or } 6X + 7y = 17700. \quad \ldots(i)$$

Also, $\frac{x}{4} = \frac{y}{5}$ or $5X - 4y = 0$ $\quad \ldots(ii)$

Solving (i) and (ii), we get : x = 1200 and y = 1500.

Total sum = Rs. 2700.

23- If simple interest on a certain sum of money is Rs. 256 and the rate of interest per annum equals the number of years, then the rate of interest is:

- **A.**13%
- **B.**14%
- **C.**15%
- **D.**16%
- **E.**None of these

Answer & Explanation

Answer - **D** (16%)

Explanation -

Here, I = Rs. 256
Let the principal be Rs. 100
Let the rate of interest per annum be X%
The, time(T) = X years
Therefore, using the formula

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

We have, $x = \frac{100 \times 256}{100 \times X}$ $X^2 = 256$ or X = 16%

Rate of interest per annum is 16%

24- If the simple interest on Rs. 3000 is less than the Simple Interest on Rs. 2000 at 5% by Rs. 50, find the time?

- **A.**1
- **B.**2
- **C.**3
- **D.**4
- **E.**None of these

Answer & Explanation

Answer - **A** (1)

Explanation -

Here P_1 = Rs. 3000

P_2 = Rs. 2000

$$\text{Difference in interest} = \frac{(\text{Difference in P}) \times N \times R}{100}$$

$$50 = \frac{1000 \times 5 \times N}{100}; \quad N = 1 \text{ year}$$

25- A lends Rs. 2500 to B and a certain sum to C at the same time at 7% per annum simple interest. If after 4 years, A altogether receives Rs. 1120 as interest from B and C, then the sum lent to C is:

- **A.**700
- **B.**1500
- **C.**4000
- **D.**6500
- **E.**None of these

Answer & Explanation

Answer - **B** (1500)

Explanation -

Let the sum lent to C be Rs. X, Then, $\frac{2500 \times 7 \times 4}{100} + \frac{X \times 7 \times 4}{100} = 1120$

$\frac{7}{25}X = (1120 - 700)$

$X = \frac{420 \times 25}{7} = 1500.$

26- A sum of Rs. 7700 is to be divided among three brothers Suresh, Bala and Krishnan in such a way that simple interest on each part at 5% per annum after 1, 2 and 3 years, respectively remains equal. The Share of Suresh is more than that of Krishnan by:

- **A.**2500
- **B.**2800
- **C.**3000
- **D.**3200
- **E.**None of these

Answer & Explanation

Answer - **B** (2800)

Explanation -

Here, $T_1 = 1$, $T_2 = 2$, $T_3 = 3$

$R_1 = R_2 = R_3 = 5\%$

The Shares of Suresh, Bala and Krishnan will be in the ratio

$$\frac{1}{R_1T_1} : \frac{1}{R_2T_2} : \frac{1}{R_3T_3} = \frac{1}{1x5} : \frac{1}{2x5} : \frac{1}{3x5}$$

$$= \frac{1}{1} : \frac{1}{2} : \frac{1}{3} = 6 : 3 : 2$$

Sum of proportionals = 6 + 3 + 2 = 11.

Share of Suresh = $\frac{6}{11}$ x 7700 = Rs. 4200

Share of Bala = $\frac{3}{11}$ x 7700 = Rs. 2100

Share of Krishnan = $\frac{2}{11}$ x 7700 = Rs. 1400

Therefore, Suresh's share is 4200 - 1400 = Rs. 2800 more than that of Krishnan

27- A sum of money is lent at S.I for 8 years. If the same amount is paid at 5% higher, Ramesh would have got Rs. 100 more. Find the Principal?

- **A.**200
- **B.**240
- **C.**250
- **D.**300
- **E.**None of these

Answer & Explanation

Answer - **C** (250)

Explanation -

Let the Principal be P Rs.
Let the first rate of interest be r
The difference in r is 5
5 x P x N = (Difference in interest) x 100
5 x P x 8 = 100 x 100

$$p = \frac{100 \times 100}{5 \times 8} = \text{Rs. } 250$$

28- A sum was put a simple interest at a certain rate for 2 years. Had it been put at 3% higher rate, it would have fetched Rs. 72 more. The sum is:

- **A.**8%
- **B.**9%
- **C.**10%
- **D.**11%
- **E.**None of these

Answer & Explanation

Answer - **C** (10%)

Explanation -

We have, T = 2 years.

Let the principal be Rs. X

Then, simple interest (I) = Rs. $\frac{X}{5}$

Rate of interest (R) = $\frac{100 \times I}{P \times T} = 100 \times \frac{\frac{X}{5}}{X \times 2}$

$\frac{100}{5 \times 2}$ = 10% p.a.

29- Mr. Satish invested an amount of Rs. 12000 at the simple interest rate of 10% per annum and another amount at the simple interest rate of 20% per annum. The total interest earned at the end of one year on the total amount invested became 14% per annum. Find the total amount invested?

- **A.**20,000
- **B.**21,000
- **C.**20,800
- **D.**21,000
- **E.**None of these

Answer & Explanation

Answer - **A** (20,000)

Explanation -

Here, P_1 = Rs. 12000, R_1 = 10%, P_2 = ?, R_2 = 20%, R = 14%

Therefore, using the formula

$$R = \frac{P_1R_1 + P_2R_2}{P_1 + P_2}$$

We get, $14 = \frac{12000 \times 10 + P_2 \times 20}{12000 + p_2}$

or, P2 = Rs. 8000

Total amount invested = Rs.(12000 + 8000) = Rs. 20000

30- A sum of Rs. 2600 is lent out in two parts in such a way that the interest on one part at 10% for 5 years is equal to that on another at 9% for 6 years. The sum lent out at 10% is:

- **A.**1150
- **B.**1250
- **C.**1350
- **D.**1450
- **E.**None of these

Answer & Explanation

Answer - **C** (1350)

Explanation -

Let the sum lent at 10% be Rs. a and that lent at 9% be Rs. (2600 - a). Then,

$$\frac{a \times 10 \times 5}{100} = \frac{(2600 - a) \times 9 \times 6}{100}$$

$$\Rightarrow 50a = (2600 \times 54) - 54a$$

$$a = \frac{2600 \times 54}{104} = 1350.$$

Sum lent at 10% = Rs. 1350