1- The Simple interest on a certain sum for 2 years at 10% per annum is Rs. 90. The corresponding compound interest is:

- **A.**99
- **B.**95.60
- **C.**94.50
- **D.**108
- **E.**None of these

Answer & Explanation

Answer - **C** (94.50)

Explanation -

$$\text{Sum} = \frac{100 \times 90}{2 \times 10} = \text{Rs. } 450$$

$$\text{C.I.} = \text{Rs. } 450 \times \left(1+\frac{10}{100}\right)^2 - 450$$

$$= \text{Rs. } 94.50$$

2- Manish earns an interest of Rs 1656 for the third year and Rs 1440 for the second year on the same sum. Find the rate of interest if it is lent at compound interest:

- **A.**18
- **B.**12
- **C.**15
- **D.**10
- **E.**None of these

Answer & Explanation

Answer - **C** (15)

Explanation -

Interest on Rs 1440 = Rs 216 for the third year

$$\text{Rate \%} = \frac{216 \times 100}{1440 \times 1} = 15$$

3- If the difference between the simple interest and compound interests on some principal amount at 20% for 3 years is Rs. 48, then the principal amount is

- **A.**648
- **B.**600
- **C.**375
- **D.**350
- **E.**None of these

Answer & Explanation

Answer - **C** (375)

Explanation -

For three years

$$\text{Sum} = \frac{\text{Difference} \times (100)^3}{r^2(300 + r)}$$

$$= \frac{48 \times (100)^3}{20^2 (300 + 20)}$$

$$= \text{Rs. } 375$$

4- What sum invested for 2 years at 12% compounded annually will grow to Rs. 4390.40.....

- **A.**4000
- **B.**3875
- **C.**3800
- **D.**3500
- **E.**None of these

Answer & Explanation

Answer - **D** (3500)

Explanation -

$$P\left(1+\frac{R}{100}\right)^{T} = \text{Amount}$$

$$P\left(1+\frac{12}{100}\right)^{2} = 4390.40$$

$$P\left(\frac{112}{100}\right)^{2} = 4390.40$$

$$P = \frac{43904000}{112 \times 112} = 3500.$$

5- A sum of money is borrowed and paid back in two annual instalments of Rs. 882 each allowing 5% compound interest. The sum borrowed was:

- **A.**1620
- **B.**1640
- **C.**1680
- **D.**1700
- **E.**None of thees

Answer & Explanation

Answer - **B** (1640)

Explanation -

$$= \frac{882}{(1+\frac{5}{100})} + \frac{882}{(1+\frac{5}{100})^2} = \frac{882 \times 20}{21} + \frac{882 \times 400}{441} = \text{Rs. } 1640$$

6- Divide Rs. 3903 between A and B, so that A's Share at the end of 7 years may equal to B's share at the end of 9 years, compound interest being at 4 percent.

- **A.**2018 and 1885
- **B.**2028 and 1875
- **C.**2008 and 1895
- **D.**2038 and 1865
- **E.**None of these

Answer & Explanation

Answer - **B** (2028 and 1875)

Explanation -

We have (A's present share) $(1+\frac{4}{100})^7$ = (B's present share) $(1+\frac{4}{100})^9$

$$\frac{\text{A's present share}}{\text{B's present share}} = (1+\frac{4}{100})^2$$

$$= (\frac{26}{25})^2 = \frac{676}{625}$$

Dividing Rs. 3903 in the ratio of 676:625

$$\text{A's present share} = \frac{676}{(676+625)} \text{ of Rs. } 3903$$

$$= \text{Rs. } 2028$$

B's present share = Rs. 3903 - Rs. 2028

= Rs. 1875

7- Some money was lent on 4% C.I. If the difference in interest of second and the first year is Rs. 88, find out the sum

- **A.**50000
- **B.**55000
- **C.**60000
- **D.**65000
- **E.**None of these

Answer & Explanation

Answer - **B** (55000)

Explanation -

Interest on Rs. 100 for the year = Rs. 4

Interest on Rs. 100 for the second year

$$= 100 \left(1+\frac{4}{100}\right)^2 - 1 - 4$$

= Rs. 4.16

Now if Rs. 4.16 - Rs. 4 = Rs. 0.16 is the difference then principal = Rs. 100

Now if Rs. 88 is the difference then principal = $\frac{100 \times 88}{16}$ = Rs. 55,000

8- Vibhor borrows Rs 65,000 at 10% per annum simple interest for 3 years and lends it at 10% per annum compound interest for 3 years. Find his gain after three year.

- **A.**1300
- **B.**1315
- **C.**2000
- **D.**2015
- **E.**None of these

Answer & Explanation

Answer - **D** (2015)

Explanation -

S.I. on Rs 65000 @ 10% for years

$$= \frac{65000 \times 10 \times 3}{100} = \text{Rs } 19500$$

C.I. on Rs 65000 @ 10% for 3 years

$$= 65000 \left(1+\frac{10}{100}\right)^3 - 65000$$

$$= 65000 \frac{11 \times 11 \times 11 - 10 \times 10 \times 10}{1000}$$

= Rs. 21515

Required gain = 21515 – 19500 = Rs. 2015.

9- A sum of money becomes Rs. 6690 after three years and Rs. 10035 after six years on compound interest. The sum is -

- **A.**4400
- **B.**4445
- **C.**4460
- **D.**4520
- **E.**None of these

Answer & Explanation

Answer - **C** (4460)

Explanation -

Let the principal be P, then

$$P\left(1+\frac{R}{100}\right)^3 = 6690 \quad \text{...(i)}$$

and

$$P\left(1+\frac{R}{100}\right)^6 = 10{,}035 \quad \text{...(ii)}$$

Now, Dividing (ii) by (i), we get

$$\left(1+\frac{R}{100}\right)^3 = \frac{10035}{6690} = \frac{3}{2}$$

$$Px\frac{3}{2} = 6690$$

$$P = 6690 \times \frac{2}{3} = \text{Rs. } 4460$$

10- A sum of money at compound interest amounts to Rs. 578.40 in 2 years and to Rs. 614.55 in 3 years. The rate of interest per annum is

- **A.**4%
- **B.**5%
- **C.**6.25%
- **D.**8.33%
- **E.**None of these

Answer & Explanation

Answer - **C** (6.25%)

Explanation -

$$\text{Rate} = \frac{(614.55-578.40)\times 100}{578.40}$$

$$= \frac{3615}{578.40} = 6.25\%$$