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# Compound Interest Questions Quiz for CDS, CLAT, SSC and Bank Clerk Pre Exams.

## Compound Interest Quiz 7

Directions: Kindly study the following Questions carefully and choose the right answer:

1. Rs. 6100 was partly invested in Scheme A at 10% pa compound interest (compounded annually) for 2 years and partly in Scheme B at 10% pa simple interest for 4 years. Both the schemes earn equal interests. How much was invested in Scheme A?

- A. Rs. 3750      B. Rs. 4500      C. Rs. 4000      D. Rs. 3250      E. Rs. 5000

2. A sum of Rs. 198 deposited at CI doubles itself after 4 years. After 20 years it will become

- A. Rs. 6336      B. Rs. 5894      C. Rs. 9250      D. Rs. 7932      E. None of these

3. Lata had Rs. 40000. She invested some amount in scheme A at CI at 15% and the remaining amount in scheme B at SI at 10%. If she got the same interest from both the investments at the end of one year. How much in Rs. did she invest in scheme B?

- A. Rs. 34000      B. Rs. 24000      C. Rs. 16000      D. Rs. 18000      E. Rs. 20000

4. An amount of Rs. 110000 is invested at compound interest payable annually. If the rate of interest is 11% pa, what will be the total interest after two years?

- A. Rs. 23481      B. Rs. 25531      C. Rs. 24200      D. Rs. 26416      E. None of these

5. Find the compound interest on Rs. 12000 for 2 years, the rate of interest being 3% per annum.

- A. Rs. 840.8      B. Rs. 935.7      C. Rs. 1035.6      D. Rs. 730.8      E. Rs. 473.5

6. A man invests equal sums at the rate of 10% per annum compound interest and simple interest respectively for 2 years. After 2 years, the difference between the compound interest and the simple interest is Rs. 1000. Then the sum is

- A. Rs. 100500      B. Rs. 110000      C. Rs. 120000      D. Rs. 100000      E. Rs. 900000

7. An amount is given at an interest of 8% pa. What is the amount if the difference of compound and simple interest for 2 years is Rs. 352 ?

- A. Rs. 55000      B. Rs. 50000      C. Rs. 45000      D. Rs. 40000      E. Rs. 35000

8. The difference between the simple interest and the compound interest compounded annually at the same rate of interest on a sum of money at the end of two years is Rs. 162. What is definitely the rate per cent per annum?

- A. 4      B. 7.5      C. 10      D. Data inadequate      E. 5

9. What is the difference between the compound interest and the simple interest accrued on an amount of Rs. 16,200 at the end of three years @ 25%? (Rounded off to two digits after decimal)

- A. 3213.44      B. 3302.42      C. 3495.28      D. 3290.63      E. None of these

10. The simple interest accrued on a certain principal at a rate of 9% p.c.p.a. in 5 years is Rs. 14,400. What would be the compound interest accrued on the same principle in 2 years at the rate of 4 p.c.p.a. ?

- A. Rs. 2614.60      B. Rs. 2641.60      C. Rs. 2611.20      D. Rs. 2624.20      E. None of these

**Correct Answers:**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
C	A	B	B	D	D	A	D	D	C

**Explanations:**

**1.** Let the amount invested in Scheme A is Rs.  $x$ .

Then, the amount invested in Scheme B be Rs.  $(6100 - x)$

Now, according to the question,

$$x \left(1 + \frac{10}{100}\right)^2 - x = \frac{(6100 - x) \times 10 \times 4}{100}$$

$$\Rightarrow x \left(\frac{121}{100} - 1\right) = \frac{(6100 - x) \times 40}{100}$$

$$\Rightarrow \frac{21x}{100} = \frac{(6100 - x) \times 40}{100}$$

$$\Rightarrow 21x = 6100 \times 40 - 40x$$

$$\Rightarrow 61x = 6100 \times 40$$

$$\Rightarrow x = \frac{6100 \times 40}{61} = \text{Rs. } 4000$$

$\therefore$  The amount invested in Scheme A is ₹ 4000.

Hence, option C is correct.

**2.**

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

$$\Rightarrow \left(1 + \frac{R}{100}\right)^4 = 2 \quad \dots(i)$$

After 20 years,

$$\left(1 + \frac{R}{100}\right)^{20} = \left[\left(1 + \frac{R}{100}\right)^4\right]^5 = 2^5 = 32$$

Thus, the amount becomes 32 times.

So, amount =  $198 \times 32 = \text{Rs. } 6336$

Hence, option A is correct.

**3.** Let the amount invested in Scheme A is Rs. x.

Then, the amount invested in Scheme B therefore will be Rs. (40000 – x)

We know that for the 1st year both Simple Interest and Compound Interest on a sum remains the same. Now, according to the question,

$$\Rightarrow 15\% \text{ of } x = 10\% \text{ of } (40000 - x)$$

$$\Rightarrow 15x = 400000 - 10x$$

$$\Rightarrow 25x = 400000$$

$$\Rightarrow x = 16000$$

$$\therefore \text{Amount invested in scheme B} = 40000 - 16000 = 24000.$$

Hence, option B is correct.

#### 4. Method I :

P = Rs. 110000; R = 11%; n = 2 years

$$CI = P \left(1 + \frac{R}{100}\right)^n - P$$

$$CI = 110000 \left(1 + \frac{11}{100}\right)^2 - 110000$$

$$= 110000 \left(\frac{111}{100}\right)^2 - 110000$$

$$= 135531 - 110000 = \text{Rs. } 25531$$

#### Method II :

To solve this question, we can apply the net% effect formula

$$\text{Net\% effect} = \left(x + y + \frac{xy}{100}\right)\%$$

Here, x = y = 11% (because rate of interest is same for both the years)

By the net% effect, we get effective rate of interest

$$= \left(11 + 11 + \frac{11 \times 11}{100}\right)\% = 23.21\%$$

Therefore, 23.21% of 110000 = Rs. 25531

Hence, option B is correct.

**5. Method I :** P = Rs. 12000; R = 3%; n = 2 years

$$CI = P \left(1 + \frac{R}{100}\right)^n - P$$

$$CI = 12000 \left(1 + \frac{3}{100}\right)^2 - 12000$$

$$= 12000 \times \frac{103}{100} \times \frac{103}{100} - 12000$$

$$= 12730.8 - 12000 = \text{Rs. } 730.8$$

**Method II :**

To solve this question, we can apply the net% effect formula

$$\text{Net\% effect} = \left(x + y + \frac{xy}{100}\right)\%$$

Here,  $x = y = 3\%$  (because rate of interest is same for both the years)

By the net% effect, we get effective rate of interest

$$= \left(3 + 3 + \frac{3 \times 3}{100}\right)\% = 6.09\%$$

Therefore, 6.09% of 110000 = Rs. 730.8

Hence, option D is correct.

**6. Method I :**

To solve this question, we can apply a short trick approach

$$\text{Sum} = \frac{\text{Difference} \times 100^2}{R^2}$$

Given, Difference = Rs. 1000,  $R = 10\%$

By the short trick approach, we get

$$\text{Sum} = \frac{1000 \times 100^2}{10^2} = \text{Rs. } 100000$$

**Method II :**

Let the sum be Rs. P.

According to the question,

$$\left[P\left(1 + \frac{10}{100}\right)^2 - P\right] - \frac{P \times 2 \times 10}{100} = 1000$$

$$\Rightarrow \left[P \times \frac{11}{10} \times \frac{11}{10} - P\right] - \frac{P}{5} = 1000$$

$$\Rightarrow \frac{21P}{100} - \frac{P}{5} = 1000$$

$$\Rightarrow \frac{P}{100} = 1000$$

$$\Rightarrow P = \text{Rs. } 100000$$

Hence, option D is correct.

### 7. Method I :

To solve this question, we can apply a short trick approach

$$\text{Amount} = \frac{\text{Difference} \times 100^2}{R^2}$$

Given, Difference = Rs. 352, R = 8%

By the short trick approach, we get

$$\text{Amount} = \frac{352 \times 100^2}{8^2} = \text{Rs. } 55000$$

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### Method II :

We can solve it by the net% formula,

Rate % of SI for 2 yr at 8% pa =  $8 \times 2 = 16\%$

Rate % of CI for 2 yr at 8%,

$$= 8 + 8 + \frac{8 \times 8}{100} = 16.64\%$$

% rate difference of CI and SI =  $16.64\% - 16\% = 0.64\%$

Let the amount be Rs. x, then

0.64% of x = 352

$$x = \frac{352 \times 100}{0.64} = \text{Rs. } 55000$$

Hence, option A is correct.

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8. To solve this question, we can apply a short trick approach

$$\text{Sum} = \frac{\text{Difference} \times 100^2}{R^2}$$

Given, Difference = Rs. 162

By the short trick approach, we get

$$\text{Sum} = \frac{162 \times 100^2}{R^2}$$

$$\Rightarrow R^2 = \frac{162 \times 100^2}{\text{Sum}}$$

The sum is not given.

∴ We can't find rate of interest.

Hence, option D is correct.

### 9. Method I :

When difference between CI and SI on a certain sum of money for 3 years, we can apply a short trick approach

$$\begin{aligned}\text{Difference} &= \frac{\text{Sum} \times R^2(300 + R)}{100^3} \\ &= \frac{16200 \times (25)^2 \times (300 + 25)}{1000000} \\ &= \frac{16200 \times 625 \times 325}{1000000} = 3290.625 \approx 3290.63\end{aligned}$$

**Method II :** SI for 3 years at the rate of 25% =  $25 \times 3 = 75\%$

CI for 3 years at the rate of 25%, applying the net% effect for first 2 years

$$= 25 + 25 + \frac{25 \times 25}{100} = 56.25\%$$

$$\text{For next year} = 56.25 + 25 + \frac{56.25 \times 25}{100} = 95.3125\%$$

Here we can see that in 3 years the given compound interest rate of interest is 95.3125%.

Difference between CI and SI for 3 years =  $(95.3125 - 75) \% = 20.3125\%$

$$\text{Now, } 20.3125\% \text{ of } 16200 = \frac{20.3125 \times 16200}{100} = 3290.625 \approx 3290.63$$

Hence, option D is correct.

### 10. Method I :

SI for 5 years at the rate of 9% =  $5 \times 9 = 45\%$

CI for 2 years at the rate of 4%, applying the net% effect

$$= 4 + 4 + \frac{4 \times 4}{100} = 8.16\%$$

45%  $\equiv$  Rs. 14400

So, 8.16%  $\equiv$  Rs. x

By cross multiplication, we get

$$x = \frac{14400 \times 8.16}{45} = \text{Rs. } 2611.20$$

**Method II :** Clearly, Rate = 9%, Time = 5 years, SI = Rs. 14400

$$\text{So, Principal} = \frac{\text{SI} \times 100}{R \times T} = \frac{14400 \times 100}{9 \times 5} = \text{Rs. } 32000$$

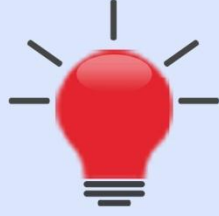
$$\text{Now, CI} = 32000 \left(1 + \frac{4}{100}\right)^2 - 32000$$

$$= 32000 \times \frac{26}{25} \times \frac{26}{25} - 32000$$

$$= 34611.20 - 32000 = \text{Rs. } 2611.20$$

Hence, option C is correct.





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