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# Compound Interest Questions Quiz for CDS, CLAT and SSC Exams

## Compound Interest Quiz 2

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

**1. Find compound interest on Rs. 7000 at 21% per annum for 2 years 4 months, compounded annually.**

A. Rs. 3824.9

B. Rs. 3966.1

C. Rs. 4094.4

D. Rs. 11109

**2. Find the compound interest on Rs. 7500 in 2 years at 6% per annum, the interest being compounded half-yearly.**

A. Rs. 941.31

B. Rs. 834.44

C. Rs. 746.21

D. Rs. 764

**3. Find the compound interest on Rs. 10,000 at 20% per annum for 6 months. compounded quarterly.**

A. Rs. 4353

B. Rs. 1329

C. Rs. 1025

D. Rs. 2649

**4. If the simple interest on a sum of money at 5% per annum for 2 years is Rs. 1400, find the compound interest on the same sum for the same period at the same rate.**

A. Rs. 1023

B. Rs. 1435

C. Rs. 3232

D. Rs. 1255

**5. If Rs. 1000 amounts to Rs. 1166.40 in two years compounded annually, Find the rate of interest per annum.**

A. 2% p.a

B. 4% p.a

C. 6% p.a

D. 8% p.a

**6. If the compound interest on certain sum at  $50/3$  % for 3 years is Rs. 1270. Find the simple interest on the same sum at the same rate for the same period.**

A. Rs. 1202

B. Rs. 1104

C. Rs. 1080

D. Rs. 1432

**7. The difference between the compound interest and simple interest on certain sum at 10% per annum for 2 years is Rs. 175. Find the sum.**

A. Rs. 17500

B. Rs. 17854

C. Rs. 17533

D. Rs. 17132

8. The difference between the compound interest and simple interest accrued on an amount of Rs. 18,000 in 2 years was Rs. 720. What was the Rate of interest p.c.p.a.?

A. 5%

B. 10%

C. 15%

D. 20%

9. Divide Rs. 841 between A and B, so that the amount of A after 7 years is equal to the amount of B after 9 years, the interest being compounded at 5% per annum.

A. Rs. 441 and Rs. 400

B. Rs. 453 and Rs. 564

C. Rs. 321 and Rs. 583

D. Rs. 349 and Rs. 867

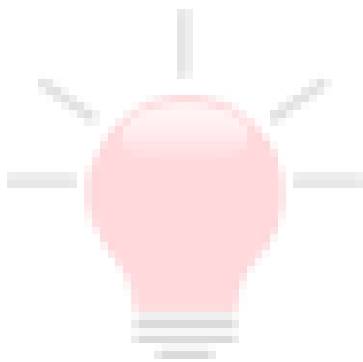
10. A certain sum amounts to Rs. 6250 in 2 years and to Rs. 6875 in 3 years. Find the sum.

A. Rs. 5674.69

B. Rs. 4233

C. Rs. 5254.45

D. Rs. 5165.29



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**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>
B	A	C	B	D	C	A	D	A	D

**Explanations:****1.**

$$\text{Time} = 2 \text{ years } 4 \text{ months} = 2\frac{4}{12} \text{ years} = 2\frac{1}{3} \text{ years.}$$

Let principal = P, Rate = R% per annum, Time = n years.

When interest is compounded annually. then,

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

$$\text{So, amount} = \text{Rs.} \left[7000 \times \left(1 + \frac{21}{100}\right)^2\right] \times \left(1 + \frac{1/3 \times 21}{100}\right)$$

$$\Rightarrow \text{Rs.} \left(7000 \times \frac{121}{100} \times \frac{121}{100} \times \frac{107}{100}\right)$$

$$\Rightarrow 10966.1$$

$$\text{So, C.I.} = \text{Rs.} (10966.1 - 7000) \Rightarrow \text{Rs.} 3966.1.$$

Hence, option B is correct.

**2.** When interest is compounded Half-yearly. then,

$$\text{Amount} = P\left[1 + \frac{(R/2)}{100}\right]^{2T}$$

Principal = Rs. 7500; Rate = 3% per half - year; Time = 2 years = 4 half - years.

$$\text{So, Amount} = \text{Rs.} \left[7500 \times \left(1 + \frac{3}{100}\right)^4\right]$$

$$\Rightarrow \text{Rs.} \left(7500 \times \frac{103}{100} \times \frac{103}{100} \times \frac{103}{100} \times \frac{103}{100}\right)$$

$$\Rightarrow \text{Rs.} 8441.31$$

$$\Rightarrow \text{C.I.} = \text{Rs.} (8441.31 - 7500) = \text{Rs.} 941.31.$$

Hence, option A is correct.

3.  $P = 10000$ ,  $T = 6$  months,  $R = \frac{20}{4} = 5\%$  (rate of interest apply quarterly)

By the net% effect we would calculate the effective compound rate of interest for 6 months = 10.25% (**Refer to sub-details**)

CI = 10.25% of 10000

$$CI = \frac{10.25 \times 10000}{100} = 1025.$$

**Sub-details:**

Calculation of effective compound rate of interest for 2 quarters (6 months) will be as follows.

Here,  $x = 5$  and  $y = 5\%$

$$\text{Net\% effect} = x + y = \frac{xy}{100}$$

$$= 5 + 5 + \frac{5 \times 5}{100} = 10 + 0.25 = 10.25\%$$

**Traditional Method:**

When interest is compounded Quarterly. then,

$$\text{Amount} = P \left[ 1 + \frac{(R/4)}{100} \right]^{4T}$$

Principal = Rs. 10000; Time = 6 months = 2 quarters; Rate = 20% per annum = 5% per quarter

$$\text{So, Amount} = \text{Rs.} \left[ 10000 \times \left( 1 + \frac{5}{100} \right)^2 \right]$$

$$\Rightarrow \text{Rs.} \left( 10000 \times \frac{21}{20} \times \frac{21}{20} \right) \Rightarrow 11025.$$

So, C.I. = Rs. (11025 – 10000)  $\Rightarrow$  Rs. 1025.

Hence, option C is correct.

4. We know, that

SI =  $rt\%$  (rate of interest & time) and by the net% effect we would calculate the effective compound rate of interest for 2 years = 10.25% (**Refer to sub-details**)

$$1400 = (2 \times 5)\%$$

So, 10%  $\equiv$  Rs. 1400

10.25%  $\equiv$  Rs. x

By the cross multiplication, we get

$$x = \frac{1400 \times 10.25}{10} = \text{Rs. } 1435.$$

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**Sub-details:**

Calculation of effective compound rate of interest for 2 years will be as follows.

Here,  $x = 5$  and  $y = 5\%$

$$\text{Net\% effect} = x + y = \frac{xy}{100}$$

$$= 5 + 5 + \frac{5 \times 5}{100} = 10 + .25 = 10.25\%$$

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**Traditional Method:**

Clearly, Rate = 5% p.a, Time = 2 years, S.I = Rs. 1400.

$$\text{So, principal} = \text{Rs.} \left( \frac{100 \times 1400}{2 \times 5} \right) = \text{Rs. } 14000.$$

$$\text{Amount} = \text{Rs.} \left[ 14000 \times \left( 1 + \frac{5}{100} \right)^2 \right] \Leftrightarrow \text{Rs.} \left( 14000 \times \frac{21}{20} \times \frac{21}{20} \right) \Rightarrow \text{Rs. } 15435.$$

So, C.I. = Rs. (15435 – 14000) = Rs. 1435.

Hence, option B is correct.

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**5.** Principal = Rs. 500; Amount = Rs. 583.20; Time = 2 years.

Let the rate be R% per annum. then,

$$\left[ 1000 \left( 1 + \frac{R}{100} \right)^2 \right] = 1166.40.$$

Or

$$\left( 1 + \frac{R}{100} \right)^2 = \left( \frac{108}{100} \right)^2$$

$$\Rightarrow 1 + \frac{R}{100} = \frac{108}{100} \text{ or } R = 8.$$

So, Rate = 8% p.a

Hence, option D is correct.

6. Let the sum be Rs. x, then,

$$\text{C.I.} = \left[ x \times \left( 1 + \frac{50}{3 \times 100} \right)^3 - x \right] = \left( \frac{343x}{216} - x \right) = \frac{127x}{216}$$

$$\text{So, } \frac{127x}{216} = 1270 \text{ or } x = \frac{1270 \times 216}{127} = 2160.$$

Thus, the sum is Rs. 2160.

$$\text{So, S.I.} = \text{Rs.} \left( 2160 \times \frac{50}{3} \times 3 \times \frac{1}{100} \right) = \text{Rs. } 1080.$$

Hence, option C is correct.

### 7. Method I:

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

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

Given,

$$\text{Difference} = 175, r = 10\%$$

By the short trick approach, we get

$$\text{Sum} = \frac{175 \times 100^2}{10^2} = 17500/-$$

### Method II:

We can solve it by the net% formula,

$$\text{Rate \% of SI for 2 yr at 10\% pa} = 10 \times 2 = 20\%$$

$$\text{Rate \% of CI for 2 yr at 10\% pa,}$$

$$= 10 + 10 + \frac{10 \times 10}{100} = 21\%$$

$$\% \text{ rate difference of CI and SI} = 21\% - 20\% = 1\%$$

Let the sum be x, then

$$1\% \text{ of } x = 175$$

$$x = \frac{175 \times 100}{1} = \text{Rs. } 17500$$

Hence, option A is correct.

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

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

Given,

Sum (Amount) = 18000, Difference = 720,  $r = ?$

By the short trick approach, we get

$$18000 = \frac{720 \times 100^2}{r^2} \Rightarrow r^2 = \frac{720 \times 100^2}{18000} \Rightarrow r^2 = 400 \Rightarrow r = 20\%$$

Hence, option D is correct.

9. Let the two parts be Rs.  $x$  and Rs.  $(841 - x)$ .

$$x\left(1 + \frac{5}{100}\right)^7 = (841 - x)\left(1 + \frac{5}{100}\right)^9$$

$$\Rightarrow \frac{x}{(841 - x)} = \left(1 + \frac{5}{100}\right)^2 = \left(\frac{21}{20} \times \frac{21}{20}\right).$$

$$\Rightarrow 400x = 441(841 - x) \Rightarrow 841x = 441 \times 841 \Rightarrow x = 441.$$

So, the two parts are Rs. 441 and Rs.  $(841 - 441)$  i.e Rs. 441 and Rs. 400.

Hence, option A is correct.

10. SI for 1 year = Rs.  $(6875 - 6250) = \text{Rs. } 625$ .

$$\text{So, Rate} = \left(\frac{100 \times 625}{6250 \times 1}\right)\% = 10\%.$$

Let the sum be Rs.  $x$ , then,

$$x\left(1 + \frac{10}{100}\right)^2 = 6250 \Leftrightarrow x \times \frac{11}{10} \times \frac{11}{10} = 6250.$$

$$\Rightarrow x = \left(6250 \times \frac{100}{121}\right) = 5165.29.$$

So, Sum = Rs. 5165.29.

Hence, option D is correct.





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