

# CDS-AFCAT 1 2025

SSBCrack  
EXAMS

LIVE

# MATHS

SIMPLE & COMPOUND  
INTEREST

# MCQS



NAVJYOTI SIR



## 23 Jan 2025 Live Classes Schedule

9:00AM --- 23 JANUARY 2025 DAILY DEFENCE UPDATES --- DIVYANSHU SIR

10:00AM --- 23 JANUARY 2025 DAILY CURRENT AFFAIRS --- RUBY MA'AM

### SSB INTERVIEW LIVE CLASSES

9:30AM --- COMPLETE PSYCHOLOGICAL TESTS --- ANURADHA MA'AM

### AFCAT 1 2025 LIVE CLASSES

12:30PM --- REASONING - VENN DIAGRAMS --- RUBY MA'AM

3:00PM --- STATIC GK - BOOKS & AUTHORS --- DIVYANSHU SIR

4:30PM --- ENGLISH - SYNONYMS - CLASS 1 --- ANURADHA MA'AM

5:30PM --- MATHS - SI & CI --- NAVJYOTI SIR

### NDA 1 2025 LIVE CLASSES

10:00AM --- MATHS - TRIGONOMETRY - CLASS 1 --- NAVJYOTI SIR

11:30AM --- MEDIEVAL HISTORY - CLASS 1 --- RUBY MA'AM

1:00PM --- PHYSICS - REFRACTION OF LIGHT --- NAVJYOTI SIR

4:30PM --- ENGLISH - SYNONYMS - CLASS 1 --- ANURADHA MA'AM

### CDS 1 2025 LIVE CLASSES

11:30AM --- MEDIEVAL HISTORY - CLASS 1 --- RUBY MA'AM

1:00PM --- PHYSICS - REFRACTION OF LIGHT --- NAVJYOTI SIR

4:30PM --- ENGLISH - SYNONYMS - CLASS 1 --- ANURADHA MA'AM

5:30PM --- MATHS - SI & CI --- NAVJYOTI SIR



CDS & AFCAT 1 2025 MATHS – CLASS 3

If the rate of interest is 5%, then what would be the difference between compound interest and simple interest received on ₹ 10,000 (each) after 3 years from now ?

- (a) ₹ 175.25
- (b) ₹ 152.25
- (c) ₹ 76.25
- (d) ₹ 24.25

for 3 years on same principal,

$$CI - SI = \frac{PR^2(300 + R)}{100^3}$$

$$= \frac{10000 \times 5^2 (300 + 5)}{100 \times 100 \times 100} = \frac{305}{4} = 76.25$$

Ans. (c)

CDS & AFCAT 1 2025 MATHS – CLASS 3

Let  $x$  be the compound interest at the end of 3 years on a sum of ₹ 1000 at the rate of 10% compounded annually and  $y$  be the simple interest at the end of 3 years on a sum of ₹ 1000 at the annual rate of 11%. What is the difference between  $x$  and  $y$ ?

- (a) ₹ 16
- (b) ₹ 15
- (c) ₹ 5
- (d) ₹ 1

$$y = \frac{1000 \times 11 \times 3}{100} = ₹ 330$$

$$A = 1000 \left(1 + \frac{10}{100}\right)^3 = 1000 \times \frac{11}{10} \times \frac{11}{10} \times \frac{11}{10} = 1331$$

$$(A = \text{OR}) \quad \underline{1000} \xrightarrow{+10\%} \underline{1100} \xrightarrow{+10\%} 1210 \xrightarrow{+10\%} \underline{1331}$$

$$CI = 1331 - 1000 = ₹ 331 \quad \Rightarrow \quad \underline{x = ₹ 331}$$

Difference = ₹ 1

CDS & AFCAT 1 2025 MATHS – CLASS 3

Three amounts  $x$ ,  $y$ ,  $z$  are such that  $y$  is the compound interest on  $x$ ; and  $z$  is the compound interest on  $y$ . The rate of interest per annum and the time period in years are same. Which one of the following is correct ?

$r\%$  per annum  
' $t$ ' years

- (a)  $x^2 = yz$
- (b)  $y^2 = zx$
- (c)  $z^2 = xy$
- (d)  $x = yz$

$$y = x \left(1 + \frac{r}{100}\right)^t \Rightarrow \frac{y}{x} = \left(1 + \frac{r}{100}\right)^t$$
$$z = y \left(1 + \frac{r}{100}\right)^t$$
$$z = y \left(\frac{y}{x}\right) \Rightarrow zx = y^2$$

Q) What will be the compound interest on a sum of ₹31,250 for 2 years at 12% p.a., if the interest is compounded 8-monthly?

- (a) ₹8,106 (b) ₹8,116 (c) ₹8,016 (d) ₹8,156

$$\frac{8}{12} = \left(\frac{2}{3}\right)$$

$$\text{Amount} = P \left(1 + \frac{2}{3} \left(\frac{r}{100}\right)\right)^{\frac{3}{2}t}$$

$$= 31250 \left(1 + \frac{2}{3} \left(\frac{12}{100}\right)\right)^{\frac{3}{2} \times 2}$$

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

$$31250 \left(1 + \frac{2}{25}\right)^3$$

$$31250 \times \frac{27}{25} \times \frac{27}{25} \times \frac{27}{25}$$

$$\begin{aligned}
 & \frac{31250}{25} \times \frac{27}{25} \times \frac{27}{25} \times \frac{27}{25} = 2 \times (27)^3 \\
 & = 2 \times 19683 \\
 & = \underline{39366}
 \end{aligned}$$

$$\begin{array}{r}
 CI = 39366 \\
 - 31250 \\
 \hline
 8116
 \end{array}$$

₹ 8116

$$\begin{array}{r}
 (20+7)^3 \\
 \begin{array}{r}
 8000 \\
 343 \\
 8400 \\
 + 2940 \\
 \hline
 19683
 \end{array}
 \end{array}$$

**Q)**What will be the compound interest on a sum of ₹31,250 for 2 years at 12% p.a., if the interest is compounded 8-monthly?

- (a) ₹ 8,106 (b) ₹ 8,116 (c) ₹ 8,016 (d) ₹ 8,156

**Ans: (b)**



Q) A sum of ₹ 18,000 is lent at 10% p.a. compound interest, compounded annually. What is the difference between the compound interest for 3<sup>rd</sup> year and 4<sup>th</sup> year?

- (a) ₹ 220.60                      (b) ₹ 217.80  
(c) ₹ 221.80                      (d) ₹ 215.40

Amount

$$\begin{array}{rccccccc} 18000 & \xrightarrow{+10\%} & 18000 + 1800 & \xrightarrow{+10\%} & 19800 + 1980 & \xrightarrow{+10\%} & 21780 + 2178 \\ & & (19800) & & (21780) & & (23958) \\ & & & & & & (3^{\text{rd}} \text{ year}) \\ 23958 & \xrightarrow{+10\%} & 23958 & + & 2395.8 & \xrightarrow{\quad} & 26343.8 \end{array}$$

23958 — 3<sup>rd</sup> year →  $CI_3 = 23958 - 21780$

26343.8 — 4<sup>th</sup> year →  $CI_4 = 26343.8 - 23958$

Q) A sum of ₹ 18,000 is lent at 10% p.a. compound interest, compounded annually. What is the difference between the compound interest for 3<sup>rd</sup> year and 4<sup>th</sup> year?

- (a) ₹ 220.60                      (b) ₹ 217.80  
(c) ₹ 221.80                      (d) ₹ 215.40

**Ans: (b)**

Q) A sum of ₹5,000 is divided into two parts such that the simple interest on the first part for  $4\frac{1}{5}$  years at  $6\frac{2}{3}\%$  p.a is double the simple interest on the second part for  $2\frac{3}{4}$  years at 4% p.a. What is the difference between the two parts?

- (a) ₹680    (b) ₹600    (c) ₹560    (d) ₹620

$$\frac{x \times \frac{4\frac{1}{5}}{100} \times \frac{7}{5}}{100} = \frac{2x(5000-x) \times \frac{11}{4} \times \frac{1}{100}}{100}$$

$$28x = (10000 - 2x)11$$

$$28x + 22x = 110000$$

$$x = \frac{110000}{50} = \underline{2200}$$

$$2200 \quad \quad \quad 2800$$

difference = ₹600

- Q)** A sum of ₹5,000 is divided into two parts such that the simple interest on the first part for  $4\frac{1}{5}$  years at  $6\frac{2}{3}\%$  p.a is double the simple interest on the second part for  $2\frac{3}{4}$  years at 4% p.a. What is the difference between the two parts?
- (a) ₹680      (b) ₹600      (c) ₹560      (d) ₹620

**Ans: (b)**

**Q)**An automobile financier claims to be lending money at simple interest, but he includes the interest every six months for calculating the principal. If he is charging an interest of 10%, the effective rate of interest becomes :

- (a) 10%                                      (b) 10.25%  
(c) 10.5%                                    (d) None of these

Q) An automobile financier claims to be lending money at simple interest, but he includes the interest every six months for calculating the principal. If he is charging an interest of 10%, the effective rate of interest becomes :

- |           |                   |
|-----------|-------------------|
| (a) 10%   | (b) 10.25%        |
| (c) 10.5% | (d) None of these |

**Ans: (b)**

**Q)** There is 60% increase in an amount in 6 years at simple interest. What will be the compound interest on ₹ 12,000 after 3 years at the same rate of interest?

- (a) ₹ 2,160                      (b) ₹ 3,120  
(c) ₹ 3,972                      (d) ₹ 6,240

$$\text{₹ } P \xrightarrow{6 \text{ year}} P\left(\frac{8}{5}\right) \Rightarrow SI = \frac{8}{5}P - P = \frac{3}{5}P$$

$$\frac{3}{5}P = \frac{P \times r \times 6}{100} \Rightarrow r = 10$$

$$12000 \xrightarrow{+10\%} \begin{array}{r} 13200 \\ 1320 \end{array} \xrightarrow{+10\%} \begin{array}{r} 14520 \\ 1452 \end{array} \xrightarrow{+10\%} 15972$$

$$CI = 15972 - 12000 = 3972$$



**Q)** There is 60% increase in an amount in 6 years at simple interest. What will be the compound interest on ₹ 12,000 after 3 years at the same rate of interest?

- (a) ₹ 2,160                      (b) ₹ 3,120  
(c) ₹ 3,972                      (d) ₹ 6,240

**Ans: (c)**

Q) Out of a certain sum,  $\frac{1}{3}$ rd is invested at 3%,  $\frac{1}{6}$ th at 6% and the rest at 8%. If the simple interest for 2 years from all these investments amounts to ₹ 600, find the original sum.

- (a) ₹ 4000 (b) ₹ 5000 (c) ₹ 6000 (d) ₹ 7000

$$x - \left( \frac{x}{3} + \frac{x}{6} \right) = \frac{x}{2}$$

₹ x

$$\frac{\left( \frac{x}{3} \times 3 \times 2 \right)}{100} + \frac{\left( \frac{x}{6} \times 6 \times 2 \right)}{100} + \frac{\left( \frac{x}{2} \times 8 \times 2 \right)}{100} = 600$$

- Q) Out of a certain sum,  $\frac{1}{3}$  rd is invested at 3%,  $\frac{1}{6}$  th at 6% and the rest at 8%. If the simple interest for 2 years from all these investments amounts to ₹ 600, find the original sum.
- (a) ₹ 4000   (b) ₹ 5000   (c) ₹ 6000   (d) ₹ 7000

**Ans: (b)**

Q) If the amount on a certain principal in 3 years at 12% rate of interest compounded annually is ₹ 12,000, what will be the amount (in ₹) after the 4<sup>th</sup> year?

- (a) 14330    (b) 15440    (c) 13440    (d) 14550

$$12000 = P \left( 1 + \frac{12}{100} \right)^3$$

$$P = \frac{12000}{\left( 1 + \frac{12}{100} \right)^3} = \frac{12000}{\left( \frac{112}{100} \right)^3} = \frac{12000 \times 100^3}{112^3}$$

$$P = \frac{12000 \times 1000000}{112 \times 112 \times 112} = \frac{12000 \times 1000000}{14 \times 14 \times 14 \times 25 \times 25 \times 25 \times 375}$$

$$P \left( 1 + \frac{12}{100} \right)^4 = \underline{\hspace{2cm}}$$

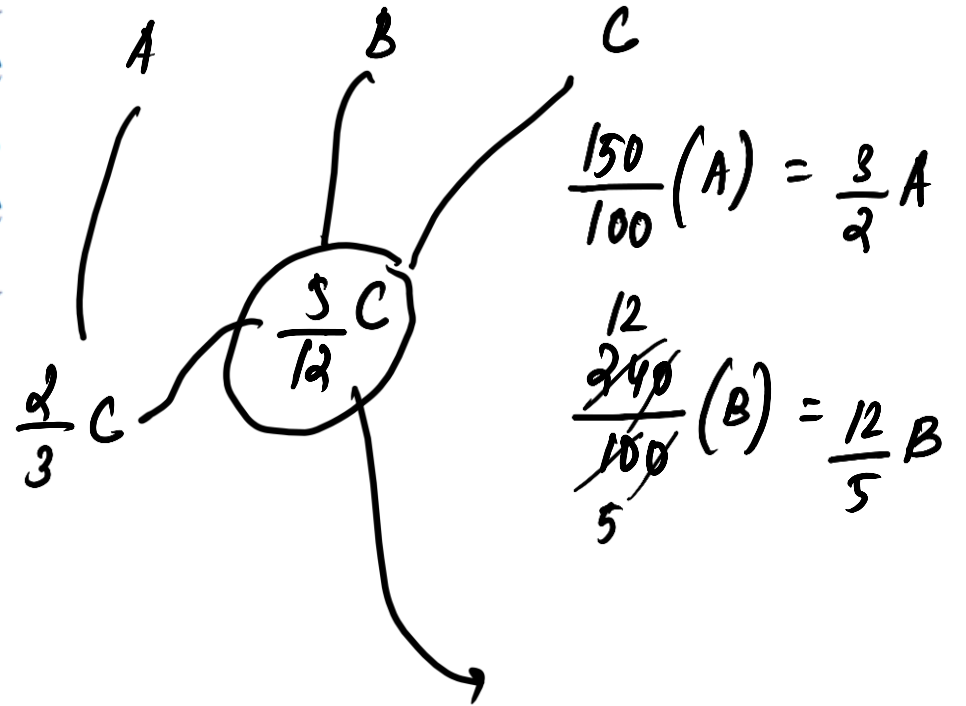
**Q)** If the amount on a certain principal in 3 years at 12% rate of interest compounded annually is ₹ 12,000, what will be the amount (in ₹) after the 4<sup>th</sup> year?

- (a) 14330    (b) 15440    (c) 13440    (d) 14550

**Ans: (c)**

Q) David invested certain amount in three different Schemes A, B and C with the rate of interest 10% p.a., 12% p.a. and 15% p.a. respectively. If the total interest accrued in one year was ₹ 3200 and the amount invested in Scheme C was 150% of the amount invested in Scheme A and 240% of the amount invested in Scheme B, what was the amount invested in Scheme B?

- (a) ₹ 5000
- (b) ₹ 6500
- (c) ₹ 8000
- (d) cannot be determined



$$\frac{\frac{2}{3} C \times 10 \times 1}{100} + \frac{\frac{5}{12} C \times 12 \times 1}{100} + \frac{C \times 15 \times 1}{100} = 3200$$

C = \_\_\_\_\_

B =  $\frac{5}{12} C =$  \_\_\_\_\_

**Q)** David invested certain amount in three different Schemes A, B and C with the rate of interest 10% p.a., 12% p.a. and 15% p.a. respectively. If the total interest accrued in one year was ₹ 3200 and the amount invested in Scheme C was 150% of the amount invested in Scheme A and 240% of the amount invested in Scheme B, what was the amount invested in Scheme B?

- (a) ₹ 5000                      (b) ₹ 6500  
(c) ₹ 8000                      (d) cannot be determined

**Ans: (a)**

**Q)** ₹ 260200 is divided between Ram and Shyam so that the amount that Ram receives in 3 years is the same as that Shyam receives in 6 years. If the interest is compounded annually at the rate of 4% per annum then Ram's share is

- (a) 125000 (b) 137745 (c) 152000 (d) 108200



**Q)** ₹ 260200 is divided between Ram and Shyam so that the amount that Ram receives in 3 years is the same as that Shyam receives in 6 years. If the interest is compounded annually at the rate of 4% per annum then Ram's share is

- (a) 125000 (b) 137745 (c) 152000 (d) 108200

**Ans: (b)**

- Q)** A man borrowed some money and agreed to pay-off by paying ₹ 3150 at the end of the 1st year and ₹ 4410 at the end of the 2nd year. If the rate of compound interest is 5% per annum, then the sum is
- (a) ₹ 5000   (b) ₹ 6500   (c) ₹ 7000   (d) ₹ 9200

- Q)** A man borrowed some money and agreed to pay-off by paying ₹ 3150 at the end of the 1st year and ₹ 4410 at the end of the 2nd year. If the rate of compound interest is 5% per annum, then the sum is
- (a) ₹ 5000   (b) ₹ 6500   (c) ₹ 7000   (d) ₹ 9200

**Ans: (c)**

**Q)** A person invested some amount at the rate of 12% simple interest and the remaining at 10%. He received yearly an interest of ₹ 130. Had he interchanged the amounts invested, he would have received an interest of ₹ 134. How much money did he invest at different rates?

- (a) ₹ 500 at the rate of 10%, ₹ 800 at the rate of 12%
- (b) ₹ 700 at the rate of 10%, ₹ 600 at the rate of 12%
- (c) ₹ 800 at the rate of 10%, ₹ 400 at the rate of 12%
- (d) ₹ 700 at the rate of 10%, ₹ 500 at the rate of 12%

**Q)** A person invested some amount at the rate of 12% simple interest and the remaining at 10%. He received yearly an interest of ₹ 130. Had he interchanged the amounts invested, he would have received an interest of ₹ 134. How much money did he invest at different rates?

- (a) ₹ 500 at the rate of 10%, ₹ 800 at the rate of 12%
- (b) ₹ 700 at the rate of 10%, ₹ 600 at the rate of 12%
- (c) ₹ 800 at the rate of 10%, ₹ 400 at the rate of 12%
- (d) ₹ 700 at the rate of 10%, ₹ 500 at the rate of 12%

**Ans: (d)**

**Q)** A merchant commences with a certain capital and gains annually at the rate of 25%. At the end of 3 years he has ₹10,000. What is the original amount that the merchant invested?

(a) ₹ 5,120

(b) ₹ 5,210

(c) ₹ 5,350

(d) ₹ 5,500

**Q)** A merchant commences with a certain capital and gains annually at the rate of 25%. At the end of 3 years he has ₹10,000. What is the original amount that the merchant invested?

- (a) ₹ 5,120                      (b) ₹ 5,210  
(c) ₹ 5,350                      (d) ₹ 5,500

**Ans: (b)**

Q) A certain sum at simple interest amounts to ₹ 1350 in 5 years and to ₹ 1620 in 8 years. What is the sum?

(a) ₹ 700

(b) ₹ 800

(c) ₹ 900

(d) ₹ 1000



Q) A certain sum at simple interest amounts to ₹ 1350 in 5 years and to ₹ 1620 in 8 years. What is the sum?

(a) ₹ 700

(b) ₹ 800

(c) ₹ 900

(d) ₹ 1000

**Ans: (c)**

**Q)** If a sum of money at a certain rate of simple interest per year doubles in 5 years and at a different rate of simple interest per year becomes three times in 12 years, then the difference in the two rates of Simple interest per year is

(a)  $2\%$

(b)  $3\%$

(c)  $3\frac{1}{3}\%$

(d)  $4\frac{1}{3}\%$

**Q)** If a sum of money at a certain rate of simple interest per year doubles in 5 years and at a different rate of simple interest per year becomes three times in 12 years, then the difference in the two rates of Simple interest per year is

(a)  $2\%$

(b)  $3\%$

(c)  $3\frac{1}{3}\%$

(d)  $4\frac{1}{3}\%$

**Ans: (c)**

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## TIME & WORK

# MCQS



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