CDS 2 2024

LIVE

MATHS

REVISION

CLASS 5

NAVJYOTI SIR

SSBCrack EXAMS

09 August 2024 Live Classes Schedule

8:00AM	09 AUGUST 2024 DAILY CURRENT AFFAIRS	RUBY MA'AM
9:00AM	09 AUGUST 2024 DAILY DEFENCE UPDATES	DIVYANSHU SIR

SSB INTERVIEW LIVE CLASSES

9:00AM	INTRODUCTION OF SRT & SDT	ANURADHA MA'AM

AFCAT 2 2024 ANSWERKEY SESSIONS

12:00PM	AFCAT 2 2024 ANSWER KEYS - SHIFT 1	
5:00PM	AFCAT 2 2024 ANSWER KEYS - SHIFT 2	

NDA 2 2024 LIVE CLASSES

11:00AM	GK - POLITY REVISION - CLASS 2	RUBY MA'AM
12:00PM	PHYSICS REVISION - CLASS 5	NAVJYOTI SIR
1:00PM	MATHS REVISION - CLASS 5	NAVJYOTI SIR
2:00PM	BIOLOGY REVISION - CLASS 5	SHIVANGI MA'AM
5:30PM	ENGLISH - MATCHING LIST - CLASS 2	ANURADHA MA'AM

CDS 2 2024 LIVE CLASSES

11:00AM	GK - POLITY REVISION - CLASS 2	RUBY MA'AM
12:00PM	PHYSICS REVISION - CLASS 5	NAVJYOTI SIR
2:00PM	BIOLOGY REVISION - CLASS 5	SHIVANGI MA'AM
3:00PM	MATHS REVISION - CLASS 5	NAVJYOTI SIR
5:30PM	ENGLISH - MATCHING LIST - CLASS 2	ANURADHA MA'AM

REVISION TOPIC :

- Time and Work
- SI and CI

Q) A, B and C can do work separately in 16, 32 and 48 days respectively. They started the work together but B leaving off 8 days and C six days before the completion of the work. In what time is the work finished?

(a) 12 days (b) 10 days (c) 14 days (d) 9 days

x days

$$\left\{ \left\{ (x)\frac{1}{16} + (x-8)\frac{1}{32} + (x-6)\frac{1}{48} = 1 \right\} \right\}$$

A's work B's work C's work

(a)

$$\frac{12}{16} + \frac{4}{32} + \frac{6}{48}$$

$$= \frac{72+12+12}{96}$$

$$= \frac{96}{96} = 1$$

Q) A, B and C can do work separately in 16, 32 and 48 days respectively. They started the work together but B leaving off 8 days and C six days before the completion of the work. In what time is the work finished?

(a) 12 days (b) 10 days (c) 14 days (d) 9 days

Ans: (a)

SSBCrack EXAMS

Q) The labourers A, B, C were given a contract of ₹ 750 for doing a certain piece of work. All the three together can finish the work in 8 day. A and C together can do it in 12 day, while A and B together can do it in $13\frac{1}{3}$ days. The money will be divided in the ratio

(a) 4 : 5 : 6 (b) 4 : 7 : 5 (c) 5 : 7 : 4 (d) 5 : 6 : 8

each one's day work ratio

$A + B + C = \frac{1}{8}$

$A + C = \frac{1}{12}$

$A + B = \frac{1}{\left(\frac{40}{3}\right)} = \left(\frac{3}{40}\right)$

$A = \frac{1}{8} - \left(\frac{1}{24} + \frac{1}{20}\right)$

$= \frac{1}{8} - \frac{44}{480}$

$= \frac{1}{8} - \frac{11}{120}$

$= \frac{15 - 11}{120} = \frac{4}{120} = \frac{1}{30}$

$B \rightarrow \frac{1}{8} - \frac{1}{12} = \frac{1}{24}$

$C \rightarrow \frac{1}{8} - \frac{3}{40} = \frac{2}{40} = \frac{1}{20}$

$\left(\underset{A}{\frac{1}{30}} : \underset{B}{\frac{1}{24}} : \underset{C}{\frac{1}{20}}\right) \times 120$

4 : 5 : 6

Q) The labourers A, B, C were given a contract of ₹ 750 for doing a certain piece of work. All the three together can finish the work in 8 day. A and C together can do it in 12 day, while A and B together can do it in $13\frac{1}{3}$ days. The money will be divided in the ratio

(a) 4 : 5 : 6 (b) 4 : 7 : 5 (c) 5 : 7 : 4 (d) 5 : 6 : 8

Ans: (a)

SSBCrack EXAMS

Q) Consider the following statements :

I. If 18 men can earn ₹ 1440 in 5 days, then 10 men can earn ₹1280 in 6 days.

II. If 16 men can earn ₹1120 in 7 days, then 21 men can earn ₹ 800 in 4 days.

Which of the above statements is/are correct?

(a) Only I (b) Only II

(c) Both I and II (d) Neither I nor II

$\therefore$ (II) $\frac{16 \times 7}{1120}$

$= \frac{70}{1120}$

$= \frac{1}{10}$

$\frac{21 \times 4}{800} = \frac{84}{800}$

$\therefore$ (I) $\frac{18 \times 5}{1440} = \frac{90}{1440} = \left(\frac{9}{144}\right) = \frac{3}{48}$

$= \left(\frac{1}{16}\right)$

$\frac{10 \times 6}{1280} = \frac{60}{1280} = \frac{6}{128} =$

constant

$\frac{\text{no. of men} \times \text{no. of hours}}{\text{Money earned}}$

Q) Consider the following statements :

I. If 18 men can earn ₹ 1440 in 5 days, then 10 men can earn ₹1280 in 6 days.

II. If 16 men can earn ₹1120 in 7 days, then 21 men can earn ₹ 800 in 4 days.

Which of the above statements is/are correct?

(a) Only I
(b) Only II
(c) Both I and II
(d) Neither I nor II

Ans: (d)

Q) A garrison of 'n' men had enough food to last for 30 days. After 10 days, 50 more men joined them. If the food now lasted for 16 days, what is the value of n?

(a) 200 (b) 240

(c) 280 (d) 320

Q) A garrison of 'n' men had enough food to last for 30 days. After 10 days, 50 more men joined them. If the food now lasted for 16 days, what is the value of n?

(a) 200 (b) 240

(c) 280 (d) 320

Ans: (a)

Q) Seventy-five men are employed to lay down a railway line in 3 months. Due to certain emergency conditions, the work was to be finished in 18 days. How many more men should be employed to complete the work in the desired time?

(a) 300 (b) 325

(c) 350 (d) 375

3×30

$= 90$ days

$75 \times 90 = (75 + x) \times 18$

$x = \frac{75 \times 72 \times 4}{18} = 300$

Q) Seventy-five men are employed to lay down a railway line in 3 months. Due to certain emergency conditions, the work was to be finished in 18 days. How many more men should be employed to complete the work in the desired time?

(a) 300 (b) 325

(c) 350 (d) 375

Ans: (a)

Q) A sum of ₹ 24000 is borrowed for $1\frac{1}{2}$ years at the rate of interest 10% per annum compound semi-annually. What is the compound interest (x) ?

(a) $x <$ ₹ 3000
(b) ₹ 3000 $< x <$ ₹ 4000
(c) ₹ 4000 $< x <$ ₹ 5000
(d) $x >$ ₹ 5000

Q) A sum of ₹ 24000 is borrowed for $1\frac{1}{2}$ years at the rate of interest 10% per annum compound semi-annually. What is the compound interest (x) ?

(a) $x <$ ₹ 3000 (b) ₹ 3000 $< x <$ ₹ 4000

(c) ₹ 4000 $< x <$ ₹ 5000 (d) $x >$ ₹ 5000

Ans: (b)

x $\quad$ $5000 - x$

Difference $= 5000 - 2x$

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

$$\frac{x \times \frac{20}{3} \times \frac{21}{5}}{100} = 2\left(\frac{(5000-x) \times 4 \times \frac{11}{4}}{100}\right)$$

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) What is the least number of years in which a sum of money at 20% compound interest will be more than doubled ?

(a) 7 (b) 6

(c) 5 (d) 4

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

$$P\left(1+\frac{20}{100}\right)^t = 2P$$

$$\left(\frac{6}{5}\right)^t = 2$$

$t=1 \rightarrow \frac{6}{5}\alpha$

$t=2 \rightarrow \frac{36}{25}\alpha$

$t=3 \quad \frac{216}{125}=\alpha$

$t=4 = \frac{1296}{625}$ ✓

Q) What is the least number of years in which a sum of money at 20% compound interest will be more than doubled ?

(a) 7 (b) 6

(c) 5 (d) 4

Ans: (d)

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

Diff.

121 − 110

= 11

100

10% → after 6 months → 110 (interest of ₹ 10)

after 1 year → 110 + 11 = 121

10% on this

21 = 100 x

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

$P\left(1+\frac{60}{100}\right)-P=51$

$\frac{3}{5}P=51$

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

$r=10\%$

CI = A − P

15972

−12000

3972

$12{,}000\left(\frac{11}{10}\right)^3$

(OR)

12000 + 1200 = 13200

13200 + 1320 = 14520

14520 + 1452 = 15972

Add = 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) 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

$C = \frac{3}{2}A$

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

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

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

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) 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

$\left(\frac{1}{2}\right)$ (P)

$$\frac{P}{3} \times \frac{3 \times 2}{100} + \frac{P}{6} \times \frac{6 \times 2}{100} + \frac{P}{2} \times \frac{8 \times 2}{100} = 600$$

$$\frac{P}{50} + \frac{P}{50} + \frac{8P}{100} = 600$$

$$12P = 60000$$

$$P = 5000$$

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) 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

1 yr ⟶ 12 months

$\frac{1}{12} \times 8$ ⟵ 8 month

$\left(\frac{2}{3}\right)$

8 - monthly ⟶ 24 months (2 × 12 months)

× 3

no. of years

$P\left(1+\frac{2}{3}\left(\frac{r}{100}\right)\right)^{\frac{3n}{2}} = 31250\left(1+\frac{8}{100}\right)^{3}$

Half yearly

$P\left(1+\frac{r}{200}\right)^{2n}$

$P\left(1+\frac{1}{2}\left(\frac{r}{100}\right)\right)^{2n}$

$$CI = 31250\left(1+\frac{8}{100}\right)^3 - 31250$$

$$= 31250 \times \frac{108}{100} \times \frac{108}{100} \times \frac{108}{100} - 31250$$

$$31250 + (8 \times 312.50) =$$

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^{rd} year and 4^{th} year?

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

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 3rd year and 4th year?

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

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^{th} year?

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

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^{th} year?

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

Ans: (c)

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) In 3 years ₹ 3000 amounts to ₹ 3993 at x% compound interest, compounded annually. The value of x is

(a) 10 (b) 8 (c) 5 (d) $3\frac{1}{3}$

Q) In 3 years ₹ 3000 amounts to ₹ 3993 at x% compound interest, compounded annually. The value of x is

(a) 10 (b) 8 (c) 5 (d) $3\frac{1}{3}$

Ans: (a)

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)

CDS 2 2024

LIVE

MATHS

REVISION

CLASS 6

NAVJYOTI SIR

SSBCrack EXAMS

REVISION TOPICS :

(12/08/24)

- Average
- Ratio and Proportion