CDS 2 2024

LIVE ●

MATHS
REVISION

CLASS 3

NAVJYOTI SIR

SSBCrack EXAMS

07 August 2024 Live Classes Schedule

Time	Class	Faculty
8:00AM	07 AUGUST 2024 DAILY CURRENT AFFAIRS	RUBY MA'AM
9:00AM	07 AUGUST 2024 DAILY DEFENCE UPDATES	DIVYANSHU SIR

SSB INTERVIEW LIVE CLASSES

Time	Class	Faculty
9:00AM	INTRODUCTION OF PPDT & PRACTICE	ANURADHA MA'AM

AFCAT 2 2024 LIVE CLASSES

Time	Class
1:00PM	MAHA MARATHON SESSION - PART 3

NDA 2 2024 LIVE CLASSES

Time	Class	Faculty
11:00AM	GK - HISTORY REVISION - CLASS 2	RUBY MA'AM
12:00PM	PHYSICS REVISION - CLASS 2	NAVJYOTI SIR
1:00PM	MATHS REVISION - CLASS 3	NAVJYOTI SIR
2:00PM	BIOLOGY REVISION - CLASS 3	SHIVANGI MA'AM

CDS 2 2024 LIVE CLASSES

Time	Class	Faculty
11:00AM	GK - HISTORY REVISION - CLASS 3	RUBY MA'AM
12:00PM	PHYSICS REVISION - CLASS 3	NAVJYOTI SIR
2:00PM	BIOLOGY REVISION - CLASS 3	SHIVANGI MA'AM
3:00PM	MATHS REVISION - CLASS 3	NAVJYOTI SIR

SSBCrack
EXAMS

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REVISION TOPIC :

- **Profit and Loss**
- **Speed, Time and Distance**

x

$(1000 - x)$

Q) A man buys 4 tables and 5 chairs for ₹ 1000. If he sells the tables at 10% profit and chairs 20% profit, he earns a profit of ₹ 120. What is the cost of one table?

$\left(\dfrac{x}{4}\right)$ $\dfrac{800}{4} = $ ₹ 200

(a) ₹ 200   (b) ₹ 220

(c) ₹ 240   (d) ₹ 260

$CP = 1000$

$profit = 120$

$SP = x \times \dfrac{110}{100} + (1000 - x)\dfrac{120}{100}$

$SP - CP = 120$

$= \dfrac{11}{10}x + 1200 - \dfrac{12}{10}x$

$1200 - \dfrac{x}{10} - 1000 = 120$

$= 1200 - \dfrac{x}{10}$

$\dfrac{x}{10} = 200 - 120$

$x = 800$

Q) A man buys 4 tables and 5 chairs for ₹ 1000. If he sells the tables at 10% profit and chairs 20% profit, he earns a profit of ₹ 120. What is the cost of one table?

(a) ₹ 200

(b) ₹ 220

(c) ₹ 240

(d) ₹ 260

Ans: (a)

Q) A shopkeeper buys a product of ₹ 150 per kg. 15% of product was damaged. At what price (per kg) should he sell the remaining so as to earn a profit of 20%?

(a) ₹ $205\dfrac{13}{17}$

(b) ₹ $207\dfrac{13}{17}$

(c) ₹ $209\dfrac{13}{17}$

(d) ₹ $211\dfrac{13}{17}$

$x\ kg$

$y\ per\ kg$ (sells at)

$CP = 150x$

$SP = x\left(\dfrac{85}{100}\right) \times (y)$

$20 = \dfrac{\left(\dfrac{85}{100}\right)xy - 150x}{150x} \times \dfrac{100}{\cancel{y}}$

$\dfrac{150x}{3}$

$30 = \dfrac{85}{100}y - 150$

$\dfrac{180 \times \overset{20}{\cancel{100}}}{\underset{17}{\cancel{85}}} = y$

$\dfrac{3600}{17} = y$

$211\dfrac{13}{17}$

Q) A shopkeeper buys a product of ₹ 150 per kg. 15% of product was damaged. At what price (per kg) should he sell the remaining so as to earn a profit of 20%?

(a) ₹ $205\dfrac{13}{17}$

(b) ₹ $207\dfrac{13}{17}$

(c) ₹ $209\dfrac{13}{17}$

(d) ₹ $211\dfrac{13}{17}$

Ans: (d)

Q) An article is sold at a certain price. If it is sold at $33\frac{1}{3}\%$ of $\left(\frac{1}{3}\right)$ this price, there is a loss of $33\frac{1}{3}\%$. What is the percentage profit when it is sold at 60% of the original selling price?

(a) 20   (b) 30   (c) $33\frac{1}{3}$ (d) $17\frac{1}{3}$

$\frac{1}{3}x \longrightarrow (SP)$

$33\frac{1}{3}\% - Loss, \left\{ \dfrac{100}{3} = \dfrac{CP - \frac{1}{3}x}{CP} \times 100 \right.$

$\dfrac{100\,CP}{3} - 100\,CP = -\dfrac{100}{3}x$

$-200\,CP = -100x$

$2CP = x \qquad \overset{\frown}{\qquad} CP = \dfrac{x}{2}$

$\left\{ \dfrac{\frac{3}{5}x - \frac{x}{2}}{\frac{x}{2}} \times 100 \right\} \dfrac{\frac{x}{10\,5} \times 100}{\frac{x}{x}} = \boxed{20}$

Q) An article is sold at a certain price. If it is sold at $33\frac{1}{3}\%$ of

this price, there is a loss of $33\frac{1}{3}\%$. What is the percentage

profit when it is sold at 60% of the original selling price?

(a) 20   (b) 30   (c) $33\frac{1}{3}$ (d) $17\frac{1}{3}$

Ans: (a)

Q) A cloth merchant buys cloth from a weaver and cheats him by using a scale which is 10 cm longer than a normal metre scale. He claims to sell cloth at the cost price to his customers, but while selling uses a scale which is 10 cm shorter than a normal metre scale. What is his gains?

(a) 20%

(b) 21%

(c) $22\dfrac{2}{9}\%$

(d) $23\dfrac{1}{3}\%$

Q) A cloth merchant buys cloth from a weaver and cheats him by using a scale which is 10 cm longer than a normal metre scale. He claims to sell cloth at the cost price to his customers, but while selling uses a scale which is 10 cm shorter than a normal metre scale. What is his gains?

(a)   20%

(b)   21%

(c) $22\dfrac{2}{9}\%$

(d) $23\dfrac{1}{3}\%$

Ans: (c)

Q) By giving 25% discount a trader earns 25% profit. If he sells the item at 10% discount, what is his profit?

(a) 10% (b) 40%

(c) 45% (d) 50%

Q) By giving 25% discount a trader earns 25% profit. If he sells the item at 10% discount, what is his profit?

(a) 10%

(b) 40%

(c) 45%

(d) 50%

Ans: (d)

Q) A man bought 500 metres of electronic wire at 50 paise per metre. He sold 50% of it at a profit of 5%. At what percent should he sell the remainder so as to gain 10% on the whole transaction?

(a) 13%   (b) 12.5%   (c) 15%   (d) 20%

Q) A man bought 500 metres of electronic wire at 50 paise per metre. He sold 50% of it at a profit of 5%. At what percent should he sell the remainder so as to gain 10% on the whole transaction?

(a) 13%   (b) 12.5%   (c) 15%   (d) 20%

Ans: (c)

Q) A shopkeeper gets a loss of 28 (4/7)% on CP, find percentage loss on SP.

(a) 30%

(b) $\dfrac{200\%}{3}$

(c) 40%

(d) None of these

Q) A shopkeeper gets a loss of 28 (4/7)% on CP, find percentage loss on SP.

(a) 30%

(b) $\dfrac{200\%}{3}$

(c) 40%

(d) None of these

Ans: (c)

Q) Five kg of butter was bought by a shopkeeper for ₹ 300. One kg becomes unsaleable. He sells the remaining in such a way that on the whole he incurs a loss of 10%. At what price per kg was the butter sold?

(a) ₹ 67.50   (b) ₹ 52.50   (c) ₹ 60   (d) ₹ 72.50

Q) Five kg of butter was bought by a shopkeeper for ₹ 300. One kg becomes unsaleable. He sells the remaining in such a way that on the whole he incurs a loss of 10%. At what price per kg was the butter sold?

(a) ₹ 67.50 (b) ₹ 52.50 (c) ₹ 60 (d) ₹ 72.50

Ans: (a)

Q) A shopkeeper allows 10% discount on goods when he sells without credit. Cost price of his goods is 80% of his selling price. If he sells his goods by cash, then his profit is

(a)   50%   (b)   70%   (c)   25%   (d)   40%

Q) A shopkeeper allows 10% discount on goods when he sells without credit. Cost price of his goods is 80% of his selling price. If he sells his goods by cash, then his profit is

(a) 50%   (b) 70%   (c) 25%   (d) 40%

Ans: (c)

Q) A dealer of scientific instruments allows 20% discount on the marked price of the instruments and still makes a profit of 25%. If his gain over the sale of an instrument is ₹ 150, find the marked price of the instrument.

(a)   ₹ 938.50

(b)   ₹ 940

(c)   ₹ 938

(d)   ₹ 937.50

Q) A dealer of scientific instruments allows 20% discount on the marked price of the instruments and still makes a profit of 25%. If his gain over the sale of an instrument is ₹ 150, find the marked price of the instrument.

(a)   ₹ 938.50

(b)   ₹ 940

(c)   ₹ 938

(d)   ₹ 937.50

Ans: (a)

Q) The price of a jewel, passing through three hands, rises on the whole by 65%. If the first and the second sellers earned 20% and 25% profit respectively, find the percentage profit earned by the third seller.

(a)   20%

(b)   10%

(c)   25%

(d)   No gain or loss

Q) The price of a jewel, passing through three hands, rises on the whole by 65%. If the first and the second sellers earned 20% and 25% profit respectively, find the percentage profit earned by the third seller.

(a)   20%

(b)   10%

(c)   25%

(d)   No gain or loss

Ans: (b)

Q) A sells an article which costs him ₹ 400 to B at a profit of 20%. B then sells it to C, making a profit of 10% on the price he paid to A. How much does C pay to B?

(a) ₹ 472   (b) ₹ 476   (c) ₹ 528   (d) ₹ 532

Q) A sells an article which costs him ₹ 400 to B at a profit of 20%. B then sells it to C, making a profit of 10% on the price he paid to A. How much does C pay to B?

(a) ₹472   (b) ₹476   (c) ₹528   (d) ₹532

Ans: (c)

Q) A scooterist completes a certain journey in 10 h. He covers half the distance at 30 km/h and the rest at 70 km/ h. What is total distance of the journey ?

(a) 210 km

(b) 400 km

(c) 420 km

(d) 500 km

Total distance be $2d$ km.

$$\frac{d}{30} + \frac{d}{70} = 10$$

$$21000 = 100d$$

$$d = 210 \implies 2d = 420 \, km$$

Q) A scooterist completes a certain journey in 10 h. He covers half the distance at 30 km/h and the rest at 70 km/ h. What is total distance of the journey ?

(a)   210 km   (b)   400 km
(c)   420 km   (d)   500 km

Ans: (c)

Q) B starts 4 minutes after A from the same point, for a place at a distance of 7 miles from the starting point. A on reaching the destination turns back and walks a mile where he meets B. If A's speed is a mile in 8 minutes then B's speed is a mile in ____ minutes.

(a) 9   (b) 12   (c) 10   (d) 8

Handwritten work:

6 miles   1 mile

7 miles,

Meeting
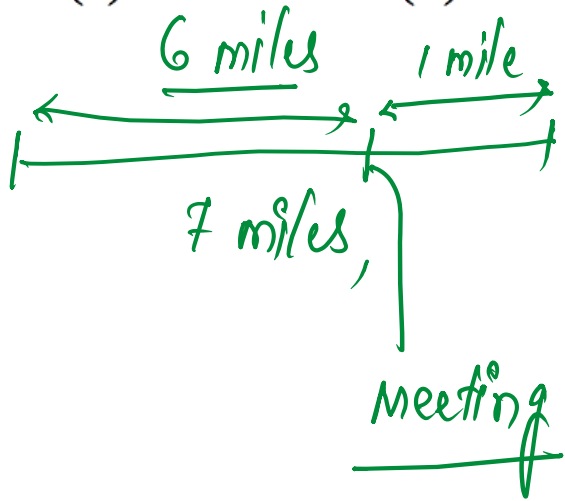
1 mile / 8 min

1 min ⟶ $\frac{1}{8}$ miles

speed of B = $\frac{6 \text{ miles}}{60 \text{ min}}$ = $\frac{1}{10}$ miles / min

8 miles ✓

Time by A = $\frac{8}{\left(\frac{1}{8}\right)}$ = 64 min

Time by B = 64 − 4 = 60 min

Q) B starts 4 minutes after A from the same point, for a place at a distance of 7 miles from the starting point. A on reaching the destination turns back and walks a mile where he meets B. If A's speed is a mile in 8 minutes then B's speed is a mile in ____ minutes.

(a) 9   (b) 12   (c) 10   (d) 8

Ans: (c)

Q) A train crosses a telegraph post in 8s and a bridge 200 m long in 24 s. What is the length of the train ?

(a) 100 m

(b) 120 m

(c) 140 m

(d) 160 m

L

v — Speed of train

$$\frac{L}{v} = 8 \implies L = 8v$$

$$\frac{L + 200}{v} = 24 \implies 8v + 200 = 24v$$

$$16v = 200$$

$$v = \frac{200}{16}$$

$$L = 8v = 8 \times \frac{\overset{100}{\cancel{200}}}{\cancel{16}}$$

$$L = 100\,m$$

Q) A train crosses a telegraph post in 8s and a bridge 200 m long in 24 s. What is the length of the train ?

(a)   100 m

(b)   120 m

(c)   140 m

(d)   160 m

Ans: (a)

Q) The speeds of three buses are in the ratio $2 : 3 : 4$. The time taken by these buses to travel the same distance will be in the ratio

(a) $2 : 3 : 4$

(b) $4 : 3 : 2$

(c) $4 : 3 : 6$

(d) $6 : 4 : 3$ ✓

Covering same distance, (time's ratio is reciprocal of speed's ratio)

$$\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$$

$$6 : 4 : 3$$

Q) The speeds of three buses are in the ratio $2 : 3 : 4$. The time taken by these buses to travel the same distance will be in the ratio
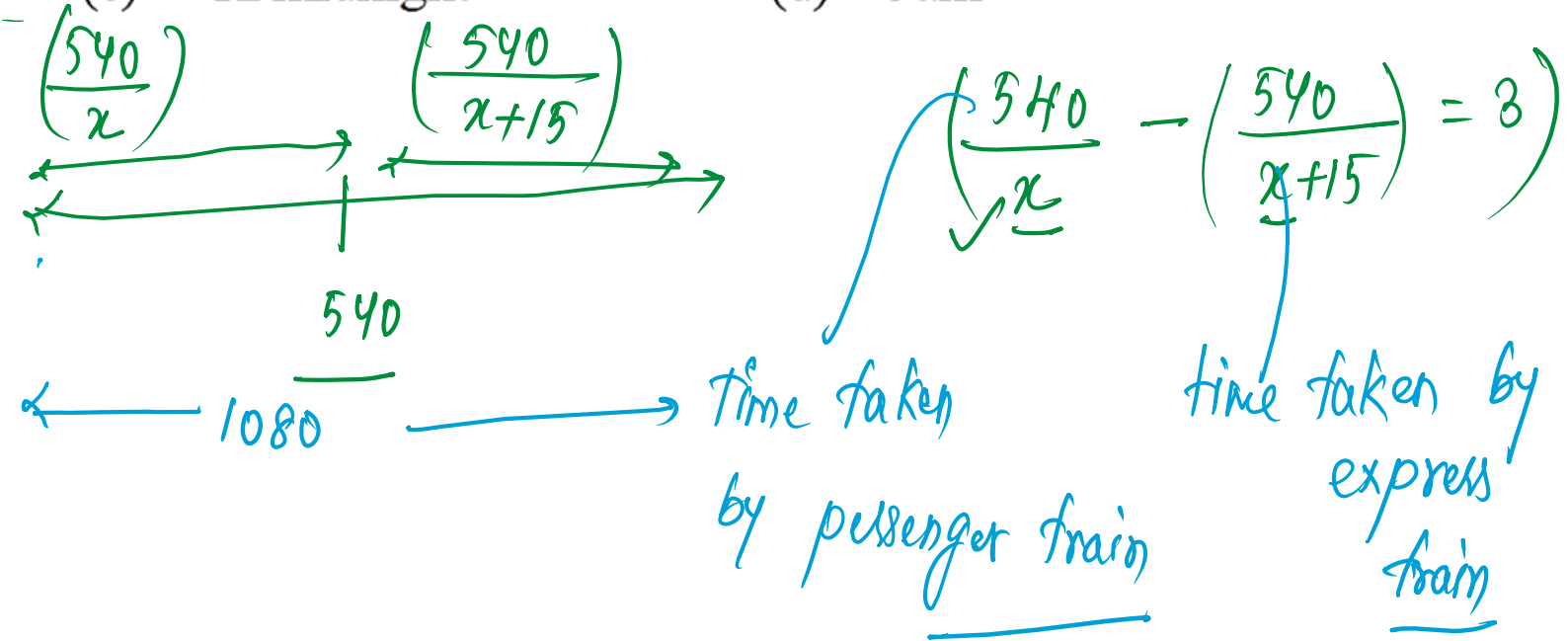
(a) $2 : 3 : 4$

(b) $4 : 3 : 2$

(c) $4 : 3 : 6$

(d) $6 : 4 : 3$

Ans: (d)

Q) A passenger train departs from Delhi at 6 pm, for Mumbai. At 9 p.m., an express train, whose average speed exceeds that of the passenger train by 15 km/hour leaves Mumbai for Delhi. Two trains meet each other mid-route. At what time do they meet, given that the distance between the cities is 1080 km ?

(a)   4 pm.

(b)   2 am.

(c)   12 midnight

(d)   6 am

passenger train — x km/h

express x —— $(x+15)$ km/h

$\left(\dfrac{540}{x}\right)$ $\left(\dfrac{540}{x+15}\right)$

$\left(\dfrac{540}{x} - \left(\dfrac{540}{x+15}\right) = 3\right)$

540

1080

Time taken by passenger train

time taken by express train

Q) A passenger train departs from Delhi at 6 pm, for Mumbai. At 9 p.m., an express train, whose average speed exceeds that of the passenger train by 15 km/hour leaves Mumbai for Delhi. Two trains meet each other mid-route. At what time do they meet, given that the distance between the cities is 1080 km ?

(a)   4 pm.

(b)   2 am.

(c)   12 midnight

(d)   6 am

Ans: (d)

Q) A boat goes 24 km upstream and 28 km downstream in 6 hours. It goes 30km upstream and 21 km downstream in 6 hours and 30 minutes. The speed of the boat in still water is :

(a)   10 km/h   (b)   4 km/h
(c)   14 km/h   (d)   6km/h

Q) A boat goes 24 km upstream and 28 km downstream in 6 hours. It goes 30km upstream and 21 km downstream in 6 hours and 30 minutes. The speed of the boat in still water is :

(a) 10 km/h   (b) 4 km/h
(c) 14 km/h   (d) 6km/h

Ans: (a)

Q) Travelling at 60 km/h, a person reaches his destination in a certain time. He covers 60% of his journey in $\frac{2}{5}$th of the time. At what speed (in km/h) should he travel to cover the remaining journey so that he reaches the destination right on time?

(a) 40   (b) 48   (c) 42   (d) 36

Q) Travelling at 60 km/h, a person reaches his destination in a certain time. He covers 60% of his journey in

$\frac{2}{5}$th of the time. At what speed (in km/h) should he travel to

cover the remaining journey so that he reaches the destination right on time?

(a)   40   (b)   48   (c)   42   (d)   36

Ans: (a)

Q) A train is travelling at 48 km/hour completely crosses another train having half its length and travelling in opposite direction at 42 km/hour in 12 s. It also passes a railway platform in 45 s. What is the length of the platform?

(a)   600 m
(b)   400 m
(c)   300 m
(d)   200 m

Q) A train is travelling at 48 km/hour completely crosses another train having half its length and travelling in opposite direction at 42 km/hour in 12 s. It also passes a railway platform in 45 s. What is the length of the platform?

(a)   600 m   (b)   400 m
(c)   300 m   (d)   200 m

Ans: (b)

Q) A train without stoppage travels with an average speed of 50 km/h, and with stoppage, it travels with an average speed of 40 km/h. For how many minutes does the train stop on an average per hour?

(a)   12   (b)   13   (c)   14   (d)   15

Q) A train without stoppage travels with an average speed of 50 km/h, and with stoppage, it travels with an average speed of 40 km/h. For how many minutes does the train stop on an average per hour?

(a) 12   (b) 13   (c) 14   (d) 15

Ans: (a)

Q) In a flight of 600 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km/hr and the time of flight increased by 30 minutes. The duration of the flight is

(a) 1 hour

(b) 2 hours

(c) 3 hours

(d) 4 hours

Q) In a flight of 600 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km/hr and the time of flight increased by 30 minutes. The duration of the flight is

(a) 1 hour

(b) 2 hours

(c) 3 hours

(d) 4 hours

Ans: (a)

Q) A thief is noticed by a policeman from a distance of 200 m. The thief starts running and the policeman chases him. The thief and the policeman run at the speed of 10 km/hr and 11 km/hr respectively. What is the distance between them after 6 minutes ?

(a)   100 m

(b)   120 m

(c)   150 m

(d)   160 m

Q) A thief is noticed by a policeman from a distance of 200 m. The thief starts running and the policeman chases him. The thief and the policeman run at the speed of 10 km/hr and 11 km/hr respectively. What is the distance between them after 6 minutes ?

(a) 100 m

(b) 120 m

(c) 150 m

(d) 160 m

Ans: (a)

Q) A motor boat, whose speed is 15 km/ hour in still water goes 30 km down–stream and comes back in a total of 4 hour and 30 minutes. The speed of the stream is

(a) 4 km/ hour

(b) 5 km/hour

(c) 6 km/ hour

(d) 10 km/hour

Q) A motor boat, whose speed is 15 km/ hour in still water goes 30 km down–stream and comes back in a total of 4 hour and 30 minutes. The speed of the stream is

(a)   4 km/ hour

(b)   5 km/hour

(c)   6 km/ hour

(d)   10 km/hour

Ans: (b)

Q) Two trains, one is of 121 m in length at the speed of 40 km/hour and the other is of 99 m in length at the speed of 32 km/hour are running in opposite directions. In how much time will they be completely clear from each other from the moment they meet?

(a)   10 s

(b)   11 s

(c)   16 s

(d)   21 s

Q) Two trains, one is of 121 m in length at the speed of 40 km/ hour and the other is of 99 m in length at the speed of 32 km/ hour are running in opposite directions. In how much time will they be completely clear from each other from the moment they meet?

(a)   10 s
(b)   11 s
(c)   16 s
(d)   21 s

Ans: (b)

Q) A man cycles with a speed of 10 km/h and reaches his office at 1 p.m. However, when he cycles with a speed of 15 km/h, he reaches his office at 11 am. At what speed sould he cycle, so that he reaces his office at 12 noon?

(a)   12.5 km/h   (b)   12 km/h
(c)   13 km/h   (d)   13.5 km/h

Q) A man cycles with a speed of 10 km/h and reaches his office at 1 p.m. However, when he cycles with a speed of 15 km/h, he reaches his office at 11 am. At what speed sould he cycle, so that he reaces his office at 12 noon?

(a) 12.5 km/h (b) 12 km/h
(c) 13 km/h (d) 13.5 km/h

Ans: (b)

Q) The distance between two points (A and B) is 110 km. X starts running from point A at a speed of 60 km/h and Y starts running from point B at a speed of 40 km/h at the same time. They meet at a point C, somewhere on the line AB. What is the ratio of AC to BC ?

(a) 3 : 2

(b) 2 : 3

(c) 3 : 4

(d) 4 : 3

Q) The distance between two points (A and B) is 110 km. X starts running from point A at a speed of 60 km/h and Y starts running from point B at a speed of 40 km/h at the same time. They meet at a point C, somewhere on the line AB. What is the ratio of AC to BC ?

(a) 3 : 2

(b) 2 : 3

(c) 3 : 4

(d) 4 : 3

Ans: (a)

Q) A man starts from a place P and reaches the place Q in 7 hours. He travels $1/4^{th}$ of the distance at 10 km/hour and the remaining distance at 12 km/hour. The distance, in kilometre, between P and Q is

(a)   72

(b)   80

(c)   90

(d)   70

Q) A man starts from a place P and reaches the place Q in 7 hours. He travels $1/4^{th}$ of the distance at 10 km/hour and the remaining distance at 12 km/hour. The distance, in kilometre, between P and Q is

(a) 72
(b) 80
(c) 90
(d) 70

Ans: (b)

Q) A train travelling at the speed of x km h crossed a 200 m long platform in 30 seconds and overtook a man walking in the same direction at the speed of 6 km/h in 20 seconds. What is the value of x?

(a)   50   (b)   54   (c)   56   (d)   60

Q) A train travelling at the speed of x km h crossed a 200 m long platform in 30 seconds and overtook a man walking in the same direction at the speed of 6 km/h in 20 seconds. What is the value of x?

(a)   50   (b) 54   (c) 56   (d) 60

Ans: (d)

Q) A man starts from B to K, another from K to B at the same time. After passing each other they complete their journeys in $3\dfrac{1}{3}$ and $4\dfrac{4}{5}$ hours, respectively. Find the speed of the second man if the speed of the first is 12 km/hr.

(a)   12.5 kmph

(b)   10 kmph

(c)   12.66 kmph

(d)   20 kmph

Q) A man starts from B to K, another from K to B at the same time. After passing each other they complete their journeys in $3\frac{1}{3}$ and $4\frac{4}{5}$ hours, respectively. Find the speed of the second man if the speed of the first is 12 km/hr.

(a)   12.5 kmph   (b)   10 kmph

(c)   12.66 kmph   (d)   20 kmph

Ans: (b)

Q) A passenger sitting in a train of length 100 m, which is running with speed of 60 km/h passing through two bridges, notices that he crosses the first bridge and the second bridge in time intervals which are in the ratio of 7 : 4 respectively. If the length of first bridge be 280 m, then the length of second bridge is:

(a) 490 m
(b) 220 m
(c) 160 m
(d) Can't be determined

Q) A passenger sitting in a train of length 100 m, which is running with speed of 60 km/h passing through two bridges, notices that he crosses the first bridge and the second bridge in time intervals which are in the ratio of 7 : 4 respectively. If the length of first bridge be 280 m, then the length of second bridge is:

(a)   490 m

(b)   220 m

(c)   160 m

(d)   Can't be determined

Ans: (c)

Q) A train after travelling 150 km meets with an accident and then proceeds with 3/5 of its former speed and arrives at its destination 8 h late. Had the accident occurred 360 km further, it would have reached the destination 4 h late. What is the total distance travelled by the train?

(a)   840 km

(b)   960 km

(c)   870 km

(d)   1100 km

Q) A train after travelling 150 km meets with an accident and then proceeds with 3/5 of its former speed and arrives at its destination 8 h late. Had the accident occurred 360 km further, it would have reached the destination 4 h late. What is the total distance travelled by the train?

(a) 840 km

(b) 960 km

(c) 870 km

(d) 1100 km

Ans: (c)

REVISION TOPICS :

(08/08/24)

- **Time and Work**