

Quiz Date: 14th July 2020

Q1. Train A starts its journey from Patna to Hazipur while train B starts from Hazipur to Patna. After crossing each other they finish their journey in 81 hours and 121 hours respectively. Then what will be speed of train B if train A speed is 44 km/h?

- (a) 44 Km/h
- (b) 55 Km/h
- (c) 36 Km/h
- (d) 46 Km/h
- (e) None of these

Q2. A man can row 7 km/hr in still water. If the river is running at 3 km/hr, it takes 6 hours more in upstream than to go downstream for the same distance. How far is the place?

- (a) 48 km
- (b) 36 km
- (c) 42 km
- (d) 40 km
- (e) None of these

Q3. Gourav fires two bullets from the same place at an interval of 15 minutes but Rohit sitting in a train approaching the place hears the second sound 14 minutes 30 seconds after the first. What is the approximate speed of train (if sound travels at the speed of 330 meter per second)?

- (a) 330/23 m/sec
- (b) 330/29 m/sec
- (c) 330/27 m/sec
- (d) 330/31 m/sec
- (e) None of the above

Q4. A train leaves the station $\frac{1}{2}$ hour before the scheduled time. The driver decreases its speed by 25 km/hr. At the next station 250 km away, the train reached on time. Find the original speed of the train.

- (a) 100 km/hr
- (b) 125 km/hr
- (c) 200 km/hr
- (d) 180 km/hr
- (e) None of these

Q5. Train – A crosses a stationary train – B in 45 seconds and a pole in 13 seconds with the same speed. The length of the train – A is 260 metres. What is the length of the stationary Train-B?

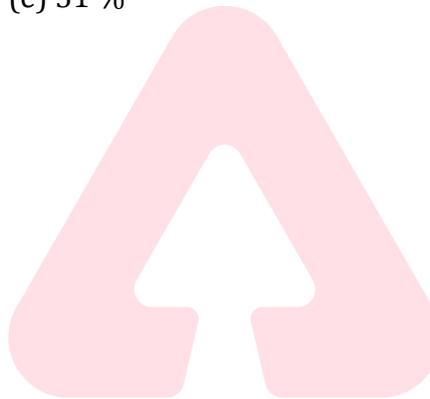
- (a) 360 metres
- (b) 260 metres
- (c) 640 metres
- (d) 460 metres
- (e) 620 metres

Q6. Three persons start walking together and their steps measure 40 cm, 42 cm and 45 cm respectively. What is the minimum distance each should walk so that each can cover the same distance in complete steps?

- (a) 25.2 m
- (b) 25.4 m
- (c) 25.8 m
- (d) 26 m
- (e) 26.5 m

Q7. A train crosses a platform and a tunnel in 18 and 32 seconds respectively. The speed of the train and length of the train are 45 kmph and 140 metres respectively. Find the length of platform is approximately what percent less than the length of tunnel?

- (a) 72%
- (b) 67%
- (c) 82%
- (d) 61%
- (e) 51 %



Q8. A 200 m long train passes a cyclist, running in the same direction at 12 km/hr, in 10 second and a car travelling in the same direction in 15 s. At what speed is the car travelling (length of both the cyclist and car is negligible)?

- (a) 36 km/hr
- (b) 30 km/hr
- (c) 34 km/hr
- (d) 32 km/hr
- (e) 28 km/hr

Q9. There was a race of 3000 meters between A & B on a circular track of 750 meters. First time they meet during the race is after 5 minutes of starting of race. Find the time taken by B to complete the race, if he runs at half the speed of A.

- (a) 20 minutes
- (b) 18 minutes
- (c) 15 minutes
- (d) 10 minutes
- (e) None of these

Q10. Point A to Point B is a downstream journey of 300 km on a stream which flows at a speed of 5 km/hr. Two boats P and Q starts from point A and Point B respectively with speed of 25 km/hr and 15 km/hr in still water. After reaching the opposite point they return to their starting points, find after how much time will they meet second time?

- (a) 7.5hour
- (b) 15hour
- (c) 20hour
- (d) 10hour
- (e) None of these

Directions (11-15) : What will come in place of the “x” in the following questions

Q11. 24% of 480 + 30% of 270 + 48% of 10 = x

- (a) 190
- (b) 195
- (c) 198
- (d) 201
- (e) 205

Q12. $\sqrt{361} \times \frac{4}{38}$ of 26 + $1024 \times 5 \div 4 = x$

- (a) 1261
- (b) 1332
- (c) 1164
- (d) 1020
- (e) 1380

Q13. $x\%$ of 360 $\div 72 + \frac{2}{7}$ of 315 = 28% of 625

- (a) 1600
- (b) 1700
- (c) 1800
- (d) 1750
- (e) 1850

Q14. $841 \div 116 \times 4 + 256 \sqrt{x} = 1082 \div 2$

- (a) 4
- (b) 9
- (c) 16
- (d) 25
- (e) 36

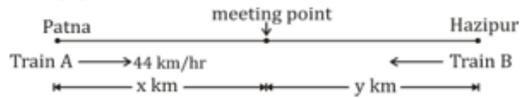
Q15. $68 \times 24 - 2\%$ of 1600 = x^2

- (a) 36
- (b) 38
- (c) 32
- (d) 29

(e) 40

Solutions

S1. Ans.(c)

Let Speed of train B = v km/hrTotal distance = $(x + y)$ kmDistance covered by train A in 81 hours = y km

$$\Rightarrow y = 44 \times 81$$

$$= 3564 \text{ km ... (i)}$$

& Distance covered by train B in 121 hours = x km

$$\Rightarrow 121v = x \text{ km ... (ii)}$$

$$\text{But } \frac{x}{44} = \frac{y}{v}$$

$$\Rightarrow x = \frac{44y}{v}$$

$$\Rightarrow x = \frac{44 \times 3564}{v} \text{ ... (iii)}$$

From (ii) and (iii)

$$121v^2 = 44 \times 3564$$

$$\text{Sol. } \Rightarrow v = 36 \text{ km/hr}$$

S2. Ans.(d)

$$x = 7 \text{ km/h}$$

$$y = 3 \text{ km/hr}$$

$$\frac{d}{7-3} = 6 + \frac{d}{10}$$

$$d = 40 \text{ km}$$

Sol.

S3. Ans.(b)

Clearly,

Sound of 2nd gunshot will take 30 seconds to cover the distance which will be equal

to the distance between the two

Hence

$$\text{Speed of train} = \frac{330 \text{ m/sec} \times 30 \text{ sec}}{(14 \times 60 + 30)}$$

$$= \frac{330 \times 30}{870} = \frac{330}{29} \text{ m/sec}$$

Sol.

S4. Ans.(b)

Let original speed of the train was x km/hr.

And original time was t hours

$$\therefore x \left(t - \frac{1}{2} \right) = (x - 25)t$$

$$\Rightarrow t = \frac{x}{50}$$

$$\text{also } x \left(t - \frac{1}{2} \right) = 250$$

$$\therefore x \left(\frac{x}{50} - \frac{1}{2} \right) = 250$$

$$\Rightarrow x^2 - 25x - 12500 = 0$$

$$\Rightarrow (x - 125)(x + 100) = 0$$

Sol. $\Rightarrow x = 125$ km/hr

S5. Ans.(c)

$$\text{Speed of train A} = \frac{260}{13}$$

$$= 20 \text{ m/sec}$$

$$\therefore \text{Length of train B} = 45 \times 20 - 260$$

$$= 640 \text{ m}$$

Sol.

S6. Ans.(a)

LCM of 40, 42 and 45

Sol. $= 2^3 \times 3^2 \times 5 \times 7 = 2520 \text{ cm} = 25.2 \text{ m}$

S7. Ans.(b)

$$\text{Speed of train (in m/s)} = 45 \times \frac{5}{18} = \frac{25}{2}$$

$$\begin{aligned} \text{Length of platform} &= 18 \times \frac{25}{2} - 140 \\ &= 85 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Length of tunnel} &= 32 \times \frac{25}{2} - 140 \\ &= 260 \text{ m} \end{aligned}$$

$$\therefore \text{Required percentage} = \frac{260 - 85}{260} \times 100$$

Sol.

$$= 67\%$$

S8. Ans.(a)

Let speed of train = x kmph
and speed of car = y kmph
then according to question

$$\frac{200}{(x-12) \times \frac{5}{18}} = 10$$

$$\Rightarrow x = 84 \text{ kmph}$$

Again,

$$\frac{200}{(x-y) \times \frac{5}{18}} = 15$$

$$\Rightarrow \frac{40}{3} \times \frac{18}{5} = 84 - y$$

$$\Rightarrow y = 36 \text{ kmph}$$

Sol.



S9. Ans.(a)

Sol.

Let speed of A is $2x$ & speed of B is x

According to question,

$$\frac{750}{a-b} = 5 \text{ min}$$

$$\Rightarrow a - b = 150 \text{ meters/min}$$

$$\Rightarrow 2x - x = 150 \text{ meters/min}$$

$$\Rightarrow x = 150 \text{ meters/min}$$

It is speed of B hence

$$\text{Time taken} = \frac{3000}{x} = \frac{3000}{150} = 20 \text{ minutes}$$

S10. Ans.(c)

Sol

Time when P and Q meet first time

$$= \frac{300}{25+15} = \frac{300}{40} = 7.5 \text{ hr}$$

$$\text{Distance travelled by P} = 7.5 \times (25 + 5) = 225 \text{ km}$$

$$\text{Distance travelled by Q} = 7.5 \times (15 - 5) = 75 \text{ km}$$

P reach at point B in $\frac{75}{30}$ i.e. 2.5 hour

In 2.5hr Q travelled $2.5 \times 10 = 25$ km

Now Boat P returns and relative distance b/w P and Q is 100 km and relative speed is 10 km i.e. difference of speed of P $(25 - 5) = 20$ km/hr (upstream) and speed of Q $(15 - 5) = 10$ km/hr (upstream)

Time taken by P and Q to meet $= \frac{100}{10} = 10$ hr

Total time when P and Q meet second time $= 7.5 + 2.5 + 10 = 20$ hr

S11. Ans.(d)

Sol.

$$\frac{24}{100} \times 480 + \frac{30}{100} \times 270 + \frac{48}{100} \times 10 = x$$

$$x = 24 \times 4.8 + 3 \times 27 + 4.8$$

$$x = 115.2 + 81 + 4.8$$

$$x = 201$$

S12. Ans.(b)

Sol.

$$x = 19 \times \frac{4}{38} \times 26 + \frac{1024 \times 5}{4}$$

$$x = 4 \times 13 + 1280$$

$$x = 1332$$

S13. Ans.(b)

Sol.

$$\frac{x}{100} \times \frac{360}{72} + \frac{2}{7} \times 315 = \frac{28}{100} \times 625$$

$$\frac{x}{20} + 2 \times 45 = \frac{7}{25} \times 625$$

$$\frac{x}{20} + 90 = 175$$

$$\frac{x}{20} = 85$$

$$x = 1700$$

S14. Ans.(a)

Sol.

$$\frac{841}{116} \times 4 + 256\sqrt{x} = 541$$

$$\frac{841}{29} + 256\sqrt{x} = 541$$

$$256\sqrt{x} = 541 - 29$$

$$256\sqrt{x} = 512$$

$$\sqrt{x} = 2$$

$$x = 4$$

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S15. Ans.(e)

Sol.

$$68 \times 24 - \frac{2}{100} \times 1600 = x^2$$

$$x^2 = 1632 - 32$$

$$x = 40$$



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