

Quiz Date: 18th April 2020

Q1. A train travels a distance of 600 km at a constant speed. If the speed of the train is increased by 5 km/hr, the journey would take 4 hrs less. Find the speed of the train.

- (a) 100 km/hr
- (b) 25 km/hr
- (c) 50 km/hr
- (d) 75 km/hr
- (e) 80 km/hr

Q2. A train covers 180 km distance in 4 hours. Another train covers the same distance in 1 hour less. What is the difference in the distances covered by these trains in one hour if they are moving in the same direction?

- (a) 45 km
- (b) 9 km
- (c) 40 km
- (d) 42 km
- (e) 15 km

Q3. A man can swim 48 m/min in still water, he swims 200 m against the current and 200 m with the current. If the difference between those two times is 10 min, what is the speed of the current?

- (a) 30 m/min
- (b) 31 m/min
- (c) 29 m/min
- (d) 32 m/min
- (e) 26 m/min

Q4. A motorboat went downstream for 28 km and immediately returned. It took the boat twice as long to make the return trip. If the speed of the river flow were twice as high, the trip downstream and back would take 672 minutes. Find the speed of the boat in still water and the speed of the river flow.

- (a) 9 km/hr, 3 km/hr
- (b) 9 km/hr, 6 km/hr
- (c) 8 km/hr, 2 km/hr
- (d) 12 km/hr, 3 km/hr
- (e) None of these

Q5. Two trains pass each other on parallel lines. Each train is 100 metres long. When they are going in the same direction, the faster one takes 60 seconds to pass the other completely. If they are going in opposite directions they pass each other completely in 10 seconds. Find the speed of the slower train in km/hr.

- (a) 30 km/hr

- (b) 42 km/hr
- (c) 48 km/hr
- (d) 60 km/hr
- (e) 56 km/hr

Q6. 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



Q7. 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

Q8. 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) $\frac{330}{23}$ m/sec
- (b) $\frac{330}{29}$ m/sec
- (c) $\frac{330}{27}$ m/sec
- (d) $\frac{330}{31}$ m/sec
- (e) None of the above

Q9. A man can row 6 km/hr in still water. If it takes him twice as long to row up, as to row down the river, then the rate of current in the stream would be

- (a) 4 km/hr
- (b) 2 km/hr
- (c) 3 km/hr
- (d) 8 km/hr
- (e) 6 km/hr

Q10. A starts driving from P to Q at 9 am and B starts driving from Q to P at 10 am B is 50% faster than A. What is the time when they meet if P and Q are 300 km apart and A's speed is 50 km/h.

- (a) 12 : 30 pm
- (b) 12 noon
- (c) 11 : 00 am
- (d) 11 : 30 am
- (e) 1 : 30 pm

Q11. The vehicle of Mr. Ghosh needs 30% more fuel at the speed of 75 kmph than it needs at the speed of 50 kmph. At a speed of 50 kmph, Mr. Ghosh can go to a distance of 195 kms. At the speed of 75 kmph, what distance he will travel?

- (a) 125 km
- (b) 150 km
- (c) 140 km
- (d) 175 km
- (e) 200 km

Q12. A plane left 30 minute later than its schedule time to reach destination 1500 km away. In order to reach in time it increased its speed by 250 km/hr. What is its original speed?

- (a) 1000 km/hr
- (b) 750 km/hr
- (c) 600 km/hr
- (d) 800 km/hr
- (e) 650 km/hr

Q13. A man goes uphill with an average speed of 24 kmph and comes down with an average speed of 36 kmph. The distance travelled in both the cases being the same, the average speed for the entire journey is:

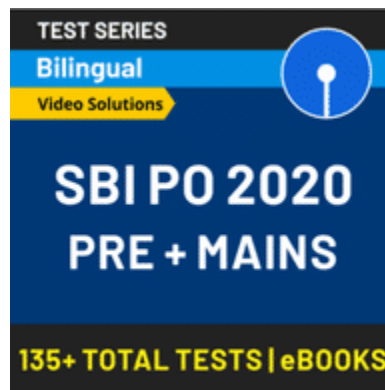
- (a) 30 kmph
- (b) 28.8 kmph
- (c) 32.6 kmph
- (d) 24.4 kmph
- (e) 26 kmph

Q14. A person travels one-fourth of a certain distance AE at x kmph, one-third of the remaining distance at $3x$ kmph and the remaining distance at $2x$ kmph. If his average speed for the entire journey is $(x + 14)$ kmph, then find the total distance he covers?

- (a) 31.2
 (b) 36
 (c) 40
 (d) Can't be determined
 (e) None of these

Q15. Two trains start from the station A and B and travel towards each other at speeds of 50 kmph and 60 kmph respectively. At the time of their meeting the second train has traveled 100 km more than the first. The distance between A and B is:

- (a) 990 km
 (b) 1200 km
 (c) 1100 km
 (d) 1440 km
 (e) 1240Km



Solutions

S1. Ans.(b)

Sol.

Let speed of the train be S kmph.

Using formula,

$$\frac{S(S+5)}{5} \times 4 = 600$$

$$S(S+5) = 750 = 25(25+5)$$

Speed of the train = 25 km/hr

Alternately,

$$\frac{600}{s} - \frac{600}{s+5} = 4$$

$$\frac{600s+3000-600s}{s(s+5)} = 4$$

$$s = 25 \text{ km/hr}$$

S2. Ans.(e)

Sol. First train speed = 45 km/hr

2nd train speed = 60 km/hr

∴ *Difference* in distance covered in 1 hr = 15 km

S3. Ans.(d)

Sol. Let speed of the current be V m/min.

$$\frac{200}{48-V} - \frac{200}{48+V} = 10$$

$$\text{Or, } 20(48 + V) - 20(48 - V) = 48^2 - V^2$$

$$\text{Or, } V^2 + 40V - 2304 = 0$$

$$\text{Or, } V = 32 \text{ m/min.}$$

S4. Ans.(a)

Sol.

Let speed boat = x km/hLet speed of stream = y km/h

Condition I

$$2 \times \frac{28}{x+y} = \frac{28}{x-y} \Rightarrow \frac{x}{y} = \frac{3}{1}$$

Condition II

$$\frac{28}{(3y+2y)} + \frac{28}{(3y-2y)} = \frac{672}{60}$$

$$\Rightarrow \frac{28}{5y} + \frac{28}{y} = \frac{672}{60}$$

$$\Rightarrow \frac{28 + 28 \times 5}{5y} = \frac{672}{60} \Rightarrow y = 3 \text{ kmph}$$

$$\therefore x = 9 \text{ kmph}$$

S5. Ans.(a)

Sol.

Let speed of faster train = x km/hLet speed of slower train = y km/h

$$\text{When both move in same direction} = \frac{60}{60 \times 60} = \frac{0.2}{x-y}$$

$$\text{When both move in opposite direction} = \frac{10}{60 \times 60} = \frac{0.2}{x+y}$$

$$x + y = 72$$

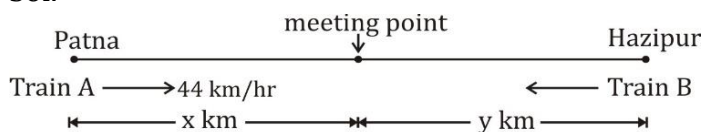
$$x - y = 12$$

$$x = 42 \text{ km/h}$$

$$y = 30 \text{ km/h}$$

S6. Ans.(c)

Sol.

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)

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

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

S7. Ans.(d)

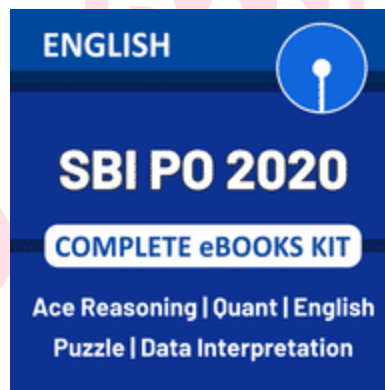
Sol. x = 7 km/h

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

let distance be d km.

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

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



S8. Ans.(b)

Sol.

Clearly,

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

Hence

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

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

S9. Ans.(b)

Sol.

Let rate of current is s kmph

ATQ,

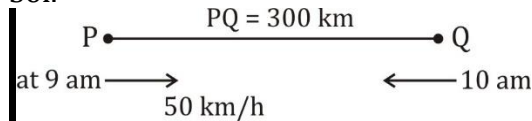
$$(6 - s) \times 2t = (6 + s) \times t$$

$$\Rightarrow 12 - 2s = 6 + s$$

$$\Rightarrow s = 2 \text{ km/hr}$$

S10. Ans.(b)

Sol.



Distance travelled by A in 1 hour = 50 km

$$\therefore \text{Remaining distance between PQ} = 300 - 50 = 250 \text{ km}$$

$$\begin{aligned} \text{B's speed} &= \frac{3}{2} \times 50 \\ &= 75 \text{ km/hr} \end{aligned}$$

$$\begin{aligned} \therefore \text{Required time} &= \frac{250}{(50 + 75)} \\ &= 2 \text{ h} \end{aligned}$$

i.e. meeting time = 12 noon

S11. Ans.(b)

Sol. The only thing which matters in this problem is mileage or kms per litre of the fuel. At 50 kmph, 195 kms can be covered.

According to given condition, 1.3 times the fuel will be required at 75 kmph.

Hence, distance travelled will be $195/1.3 = 150$ kms

S12. Ans.(b)

Sol.

Let original speed was x km/hr. and actual time was t hours

$$\therefore x \left(t + \frac{1}{2} \right) = 1500 \quad \dots (i)$$

$$\text{and, } (x + 250) t = 1500 \quad \dots (ii)$$

$$\therefore xt + \frac{x}{2} = xt + 250t$$

$$\Rightarrow x = 500t$$

From (i),

$$500t \left(t + \frac{1}{2} \right) = 1500$$

$$\Rightarrow 2t^2 + t - 6 = 0$$

$$\Rightarrow 2t^2 + 4t - 3t - 6 = 0$$

$$\Rightarrow t = \frac{3}{2} \text{ hours}$$

$$\begin{aligned} \therefore x &= 500 \times \frac{3}{2} \\ &= 750 \text{ km/hr} \end{aligned}$$

S13. Ans.(b)

Sol.

$$\begin{aligned} \text{Average speed} &= \frac{2 \times 24 \times 36}{24 + 36} \\ &= 28.8 \text{ km/h} \end{aligned}$$

S14. Ans.(d)

Sol.

Let total distance (AE) = d km

$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$

$$= \frac{d}{\frac{d}{4x} + \frac{d}{12x} + \frac{d}{4x}}$$

$$x + 14 = \frac{12x}{7}$$

$$\therefore x = \frac{98}{5}$$

$$x = 19.6 \text{ km/hr}$$

Since, we do not know about total time or times for individual journey. Hence, we cannot determine the required answer.

S15. Ans.(c)

Sol.

Let first train travelled x km before meeting

∴ Second train will travel (x + 100) km before meeting in same time as that by first.

$$\frac{x + 100}{60} = \frac{x}{50}$$

$$\Rightarrow x = 500 \text{ km}$$

$$\begin{aligned} \therefore \text{Required distance} &= 2 \times 500 + 100 \\ &= 1100 \text{ km} \end{aligned}$$

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