

Quiz Date: 13th June 2020

Q1. In a river, the ratio of the speed of stream and speed of a boat A in still water is 2 : 5. Again, in the same river ratio of the speed of stream and speed of an another boat B in still water is 3 : 4. What is the ratio of the speeds of the first boat to the second boat in still water ?

- (a) 10 : 7
- (b) 15 : 8
- (c) 4 : 3
- (d) 5 : 4
- (e) 7 : 11

Q2. Train – A crosses a stationary train – B in 50 seconds and a pole in 20 seconds with the same speed. The length of the train – A is 240 metres. What is the length of the stationary Train-B?

- (a) 360 metres
- (b) 260 metres
- (c) 300 metres
- (d) 350 metres
- (e) 320 metres

Q3. Ranveer goes to a place on bicycle at speed of 22 kmph and comes back at a speed of 20 kmph. If the time taken by him in second case is 36 min. more than that of first case, what is the total distance travelled by him (in km)?

- (a) 128
- (b) 136
- (c) 123
- (d) 132
- (e) 134

Q4. A man swimming in a stream which flows 2.5 kmph finds that in a given time he can swim thrice as far with the steam as he can against it. How much distance he will cover in 4 hours against the current?

- (a) 10 km
- (b) 14 km
- (c) 8 km
- (d) 9 km
- (e) 12 km

Q5. If a man cycles at 10 kmph, then he arrives at a certain place at 1 pm. If he cycles at 15 kmph, he will arrive at the same place at 11 am. At what speed must he cycle to get there at noon?

- (a) 11 kmph
- (b) 12 kmph

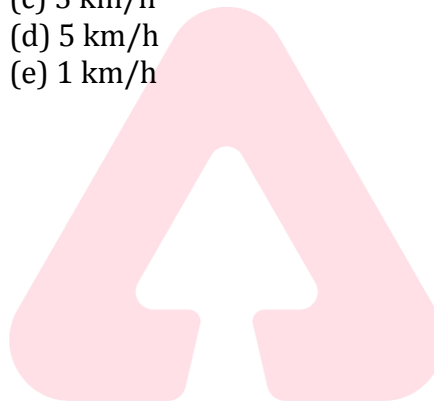
- (c) 13 kmph
- (d) 14 kmph
- (e) 16 kmph

Q6. A man covers $\frac{1}{3}$ rd of his journey by cycle at 50 km/h, the next $\frac{1}{3}$ by car at 30 km/h, and the rest by walking at 7 km/h. Find the approximate average speed during the whole journey.

- (a) 14.2 kmph
- (b) 15.29 kmph
- (c) 18.2 kmph
- (d) 12.8 kmph
- (e) 19.29 kmph

Q7. Speed of a boat in still water is 8 km/h. If time taken by boat to cover a distance of 18 km upstream and 18 km downstream together is 6 hours. Find the speed of water current.

- (a) 4 km/h
- (b) 2 km/h
- (c) 3 km/h
- (d) 5 km/h
- (e) 1 km/h



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Q8. The ratio between downstream and upstream speed of a boat is 5 : 3. Find the ratio of speed of boat in still water to that of speed of current.

- (a) 2 : 1
- (b) 3 : 1
- (c) 4 : 1
- (d) 3 : 2
- (e) 5 : 2

Q9. A man can row three quarters of a kilometer against the stream in $11\frac{1}{4}$ min. and returns in $7\frac{1}{2}$ min. with the stream. The speed of the man in still water is.

- (a) 2 km/h
- (b) 3 km/h
- (c) 4 km/h
- (d) 5 km/h
- (e) 8 km/h

Q10. The ratio between the speed of car, train and a bus is 5 : 9 : 4. The average speed of the car, bus and train is 72 kmph. What is the average speed of the car and train together?

- (a) 82 kmph
- (b) 78 kmph
- (c) 84 kmph
- (d) 96 kmph
- (e) 54 kmph

Q11. A 320 metres long train takes 80 seconds more time to cross a platform than it takes to cross a pole at the same speed. If the length of platform is twice the length of train, then find the speed of the train.

- (a) 16 m/sec
- (b) 10 m/sec
- (c) 6 m/sec
- (d) Cannot be determined
- (e) None of these

Q12. The ratio between the speed of a train and a car is 18 : 3 respectively. Also, a bus covered a distance of 480 km in 12 hours. If the speed of the bus is five-ninths the speed of the train. How much distance will the car cover in 5 hours?

- (a) 50 kms
- (b) 80 kms
- (c) 60 kms
- (d) 100 kms
- (e) 75 kms

Q13. A thief runs at a speed of 60 km/h after stealing at 3 a.m., 3 hour later his theft got noticed and the police started chasing the thief. If the thief was caught at 11 am then what was the speed of the police?

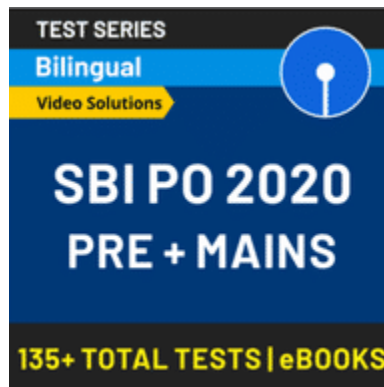
- (a) 96 km/h
- (b) 85 km/h
- (c) 84 km/h
- (d) 92 km/h
- (e) 78 km/h

Q14. Two trains A and B start running towards each-other from two opposite station P and Q respectively. Speed of train A is 6 km/h more than that of train B. After 4 hours, they meet each other at a distance of 120 km from station P. Find the ratio of speed of train A to that of train B.

- (a) 5 : 4
- (b) 4 : 5
- (c) 3 : 2
- (d) 2 : 3
- (e) 6 : 7

Q15. If I go office with bike at a speed of 36km/h, I reach office 15 minutes early. If I go office by bus I reach office 15 minutes late. If distance between my home and office is 72 km then what is the speed of bus (Note: In both cases distance remains same)?

- (a) 32.5 km/h
- (b) 30 km/h
- (c) 28.8 km/h
- (d) 24 km/h
- (e) 26 km/h



Solutions

S1. Ans.(b)

Sol.

For the first boat A,

Speed of stream : Speed of boat = 2 : 5

Let speed of stream be $2x$ kmph

and speed of boat A = $5x$ kmph

Similarly, for the second boat

Speed of stream : Speed of boat B = 3 : 4

Let speed of stream be $3y$ kmph

and speed of boat B = $4y$

In both of the conditions, river is same.

$$\therefore 2x = 3y$$

$$\Rightarrow x = \frac{3}{2}y$$

Thus, required ratio of speed of boat in still water

$$= 5x : 4y$$

$$= 5 \times \frac{3}{2}y : 4y$$

$$= 15 : 8$$

S2. Ans.(a)

Sol.

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Let length of train-B is l metres

$$\frac{240 + l}{50} = \frac{240}{20}$$

$$\Rightarrow l = 360 \text{ metres}$$

S3. Ans.(d)

Sol.

Let distance = d km

$$\therefore \frac{d}{20} = \frac{d}{22} + \frac{3}{5}$$

$$\Rightarrow d = 132 \text{ km}$$

S4. Ans.(a)

Sol.

Let speed of man = x kmph

$$\therefore (x + 2.5) = 3(x - 2.5)$$

$$\Rightarrow 2x = 10$$

$$\Rightarrow x = 5 \text{ kmph}$$

$$\therefore \text{Required distance} = (5 - 2.5) \times 4 \\ = 10 \text{ km}$$

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S5. Ans.(b)

Sol.

According to question,

$$T_1 - T_2 = 2 \text{ hours}$$

$$\text{Or } \frac{D}{10} - \frac{D}{15} = 2$$

By solving $D = 60$ km

$$\text{In first case } T = \frac{60}{10} = 6 \text{ hours}$$

But for reaching 12 noon, $T = 5$ hours

$$\text{So, } S = \frac{D}{T} = \frac{60}{5} = 12 \text{ kmph}$$

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S6. Ans.(b)

Sol.

Let total distance be x km.

∴ Required average speed

$$= \frac{x}{\left(\frac{x}{150} + \frac{x}{90} + \frac{x}{21}\right)}$$

$$= \frac{3150}{(21 + 35 + 150)}$$

$$= 15.29 \text{ km/hr}$$

S7. Ans.(a)

Sol.

Let speed of current = s km/h

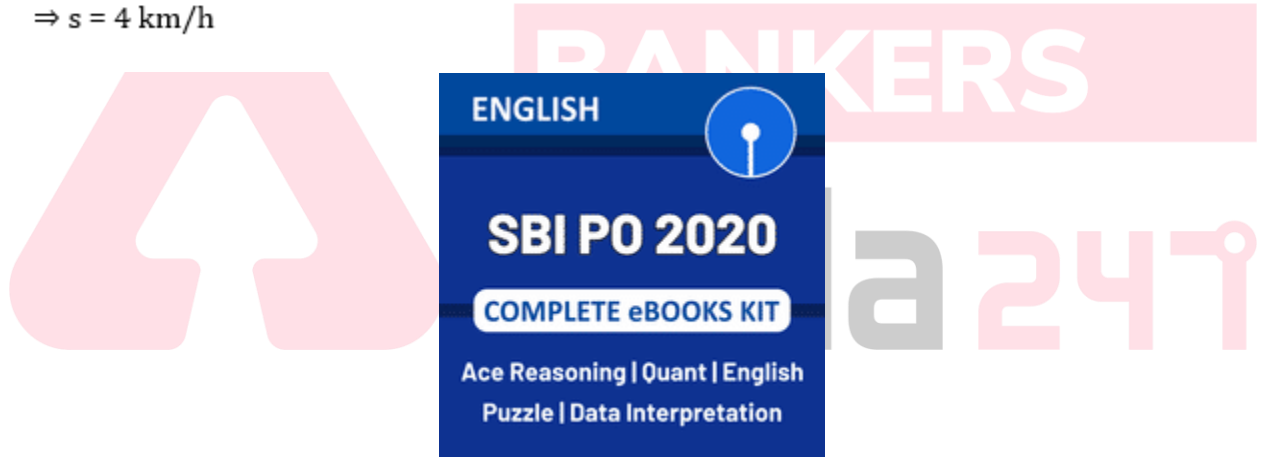
Atq,

$$\frac{18}{8+s} + \frac{18}{8-s} = 6$$

$$\Rightarrow 3(8-s+8+s) = 64 - s^2$$

$$\Rightarrow s^2 - 16 = 0$$

$$\Rightarrow s = 4 \text{ km/h}$$



S8. Ans.(c)

Sol.

Let speed of boat in still water = v km/h

Speed of current = r km/h

Atq,

$$\frac{v+r}{v-r} = \frac{5}{3}$$

$$\Rightarrow 5v - 5r = 3v + 3r$$

$$\Rightarrow 2v = 8r$$

$$\Rightarrow v:r = 4:1$$

S9. Ans.(d)

Sol.

Let speed of man in still water = v km/h

And, speed of current = r km/h

$$\therefore v - r = \frac{\frac{3}{4}}{11\frac{1}{4}} \text{ km/min}$$

$$= \frac{3}{4} \times \frac{4}{45} \times 60 \text{ km/h}$$

$$v - r = 4 \text{ km/h} \quad \dots(i)$$

And,

$$v + r = \frac{\frac{3}{4}}{\frac{15}{2}} \text{ km/min}$$

$$= \frac{3}{4} \times \frac{2}{15} \times 60$$

$$v + r = 6 \quad \dots(ii)$$

Solving equation (i) and (ii) we get

$$v = 5 \text{ km/h}$$

S10. Ans.(c)

Sol.

Let speed of car, train and bus is $5x$, $9x$ and $4x$ respectively.

$$\therefore 5x + 9x + 4x = 3 \times 72$$

$$\Rightarrow 18x = 216$$

$$\Rightarrow x = 12$$

\therefore Average speed of car and train

$$= \frac{5 \times 12 + 9 \times 12}{2}$$

$$= 84 \text{ kmph}$$

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S11. Ans.(e)

Sol.

Let speed of train = x m/sec

Length of platform = $2 \times 320 = 640$ m

ATQ,

$$\frac{640 + 320}{x} - \frac{320}{x} = 80$$

$$\Rightarrow x = \frac{640}{80}$$

$$= 8 \text{ m/sec}$$

S12. Ans.(c)

Sol.

$$\begin{aligned} \text{Speed of bus} &= \frac{480}{12} = 40 \text{ km/h} \\ \therefore \text{speed of train} &= \frac{9}{5} \times 40 \\ &= 72 \text{ km/h} \\ \therefore \text{speed of car} &= \frac{3}{18} \times 72 \\ &= 12 \text{ km/h} \\ \therefore \text{Required answer} &= 5 \times 12 = 60 \text{ km} \end{aligned}$$

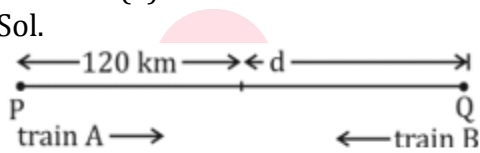
S13. Ans.(a)

Sol.

$$\begin{aligned} \text{Distance covered in 3 hours by thief} \\ &= 60 \times 3 = 180 \text{ km} \\ \frac{180}{x-60} &= 5, x = 96 \text{ km/hr} \end{aligned}$$

S14. Ans.(a)

Sol.



$$\begin{aligned} \text{Let speed of train B} &= x \text{ km/h} \\ \therefore \text{speed of train A} &= (x+6) \text{ km/h} \\ \text{But speed of train A} &= \frac{120}{4} = 30 \text{ km/h} \\ \therefore \text{speed of train B} &= 30 - 6 = 24 \text{ km/h} \\ \therefore \text{Required ratio} &= \frac{30}{24} = \frac{5}{4} \end{aligned}$$

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S15. Ans.(c)

Sol.

Let original time to cover the given distance is t hours

ATQ.

$$\left(t - \frac{15}{60}\right) \times 36 = 72$$

$$\Rightarrow t = \frac{1}{4} + 2$$

$$\Rightarrow t = \frac{9}{4} \text{ h}$$

Let speed of bus is ' x ' km/h

$$\text{And, } \left(t + \frac{15}{60}\right) \times x = 72$$

$$\text{Put } t = \frac{9}{4}$$

$$\therefore \left(\frac{9}{4} + \frac{1}{4}\right) \times x = 72$$

$$\Rightarrow x = \frac{72 \times 4}{10}$$

$$x = 28.8 \text{ km/h}$$

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