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Boat and Stream Questions for Bank Clerk Pre Exams.

Boat and Stream Quiz 5

Directions: Kindly study the following Questions carefully and choose the right answer:

1. Amit goes Mumbai to Kolkata by sea route. The speed of the boat in still water is 60 km/h and speed of the current is 15 km/h. After reaching Kolkata he stayed there for 20 minutes and after that come back by same boat. The time taken by him in this journey is 19 hours 32 minutes, find the distance travel by him in one side.

- A. 450 km B. 360 km C. 540 km D. 600 km E. None of these

2. A man can row at a speed of 12 km/hr in still water to a certain upstream point and back to the starting point in a river which flows at 3 km/hr. Find his average speed for total journey.

- A. $12\frac{3}{4}$ km/hr. B. $11\frac{3}{4}$ km/hr. C. $12\frac{1}{4}$ km/hr. D. $11\frac{1}{4}$ km/hr. E. None of these

3. The ratio of the speed of boat in still water to the speed of stream is 16 : 5. A boat goes 16.5 km in 45 minute upstream, find the time taken by boat to cover the distance of 17.5 km downstream.

- A. 30 minutes B. 25 minutes C. 50 minutes D. 45 minutes E. 42 minutes

4. If the ratio of speed of boat in downstream and speed of stream is 9 : 1, speed of current is 3 km per hr, What would be the distance travelled in upstream by the boat in 5 hours?

- A. 90 km B. 97 km C. 115 km D. 105 km E. None of these

5. In a river, the ratio of the speed of the stream and the speed of a boat in still water is 5 : 7. Again, the ratio of the speed of the stream to the speed of another boat in still water is 6 : 8. What is the ratio of the speed of the first boat to that of the second boat in still water?

- A. 27 : 29 B. 21 : 20 C. 27 : 28 D. 19 : 17 E. None of these

6. Meera covers 20 km upstream in 600 minutes and she also covers 60 km downstream in 5 hours. Then find the rate of current of the river.

- A. 2.5 km/h B. 8 km/h C. 3 km/h D. 5 km/h E. None of these

7. The speed of a motor-boat is that of the current of water as 36 : 5, the boat goes along with current in 5 hrs 10 mins. It will come back in

- A. 5 hrs 50 mins B. 6 hrs C. 6 hrs 50 mins D. 12 hrs 10 mins E. None of these

8. A man can row 21 km/hr downstream and 7 km/hr upstream. The speed of the boat in still water is

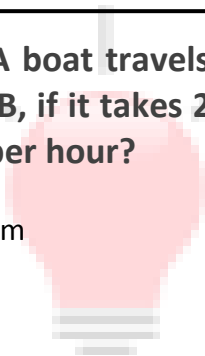
- A. 8 km/hr B. 14 km/hr C. 15 km/hr D. 12 km/hr E. None of these

9. Distance between a point A and point B in a river is 12 km and the flow of the stream is from A to B. If the speed of the boat is 4 km/h and speed of the stream is 2 km/h. The boat goes from B to A and then comes back. What is the distance between point A and the boat after 7 hours of travel since the time of starting?

- A. 2 km B. 3 km C. 4 km D. 6 km E. None of these

10. A boat travels upstream from point A to B in 5 hours. What is the distance between A and B, if it takes 2.5 hours to travel downstream from point B to A and speed of stream is 1 km per hour?

- A. 8 km B. 12 km C. 16 km D. 20 km E. None of the above



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Correct Answers:

1	2	3	4	5	6	7	8	9	10
C	D	B	D	B	D	A	B	D	E

Explanations:

1. Time taken by him in travelling = 19 hours 32 minutes – 20 minutes
= 19 hours 12 minutes

Let Distance = x km

According to the question,

$$\frac{x}{60+15} + \frac{x}{60-15} = 19\frac{12}{60}$$

$$\frac{x}{75} + \frac{x}{45} = \frac{96}{5}$$

$$\frac{5x + 3x}{225} = \frac{96}{5}$$

$$\frac{8x}{225} = \frac{96}{5}$$

$$x = 540 \text{ km}$$

Hence, option C is correct.

2. Speed of the man in still water = 12 km/hr

Speed of the stream = 3 km/hr

Speed downstream = (12 + 3) = 15 km/hr

Speed upstream = (12 – 3) = 9 km/hr

Let the distance travelled be 'd' km

Then

$$\text{Average Speed} = \frac{\text{total distance}}{\text{total time}}$$

$$= \frac{d + d}{\frac{d}{15} + \frac{d}{9}}$$

$$= \frac{2d}{\frac{9d + 15d}{15 \times 9}}$$

$$= \frac{2d \times (15 \times 9)}{24d} = \frac{45}{4} \text{ km/hr} = 11\frac{1}{4} \text{ km/hr}$$

Hence, option (D) is correct.

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3. Let the speed of boat in still water = $16x$, speed of stream = $5x$

Upstream speed = $16x - 5x = 11x$

$$S = \frac{D}{t}$$

$$11x = \frac{16.5}{45} \times 60$$

$$x = 2$$

speed of boat in still water = 32 km/h, speed of stream = 10 km/h

Downstream speed = $32 + 10 = 42$ km/h

Distance = 17.5 km

$$\text{time} = \frac{17.5}{42}$$

$$= \frac{5}{12} \text{ hour}$$

$$\text{or } \frac{5}{12} \times 60 = 25 \text{ minutes}$$

Hence, option B is correct.

4. Ratio of speed of boat in downstream and speed of stream is $9 : 1$

Given Speed of current = 3 km/h

Speed of boat in downstream = $9 \times 3 = 27$ km/h

Speed of boat in still water = Speed of boat in downstream – Speed of current

$$= 27 - 3 = 24 \text{ km/h}$$

Speed of boat in upstream = $24 - 3 = 21$ km/h

Distance travelled by boat in upstream in 5 hours = $21 \times 5 = 105$ km

Hence, option D is correct.

5. For the first boat let the speed of the stream be $5x$ and the speed of the boat be $7x$.

For the 2nd boat, let the speed of the stream be $6y$ and the speed of the 2nd boat be $8y$.

The speed of the stream will be the same.

$$\therefore 5x = 6y$$

$$\text{or, } x = \frac{6}{5}y$$

Now, the required ratio of the speed of the first boat to that of the second boat = $7x : 8y$

$$\Rightarrow 7 \times \frac{6}{5}y : 8y$$

[Putting x in terms of y]

$$\therefore \frac{21}{5}y : 8y = 21 : 20$$

Hence, option B is correct.

6. Let speed of Boat = x km/h, Speed of stream = y km/h

$$\text{Upstream speed} = \frac{\text{Distance}}{\text{Time}}$$

$$x - y = \frac{20}{(600 \div 60)}$$

$$x - y = 2 \text{ km/h} \quad \dots(1)$$

$$\text{Downstream speed} = \frac{\text{Distance}}{\text{Time}}$$

$$x + y = \frac{60}{5}$$

$$x + y = 12 \text{ km/h} \quad \dots(2)$$

Subtracting Equation (1) by Equation (2)

$$y = 5 \text{ km/h.}$$

Hence, option D is correct.

7. \therefore Distance = Speed_{downstream} \times Time

$$= (36x + 5x) \times \frac{31}{6} = \frac{41x \times 31}{6} \text{ km}$$

$$\text{Now, Speed}_{\text{upstream}} = 36x - 5x = 31x \text{ kmph}$$

$$\therefore \text{Time taken} = \frac{\text{Distance}}{\text{Speed}_{\text{upstream}}}$$

$$= \frac{41x \times 31}{31x \times 6} = \frac{41}{6} \text{ hrs}$$

$$\text{or } 6\frac{5}{6} \text{ hrs or } 6 \text{ hrs } 50 \text{ mins}$$

Hence, option C is correct.

8. Speed of boat still water

$$= \frac{1}{2}(\text{Rate downstream} + \text{Rate upstream})$$

$$= \frac{1}{2}(21 + 7) = \frac{28}{2} = 14 \text{ km/hr}$$

Hence, option B is correct.

9. The resulting speed in upstream is $4 - 2 = 2$ km/h.
And the resulting speed in downstream is $4 + 2 = 6$ km/h.
Since the boat is moving upstream from B to A.

So time taken is $\frac{12}{2} = 6$ hours

Now in downstream it takes $\frac{12}{6} = 2$ hours

So in 1 hour it will travel half the distance = 6 km.

So the distance of the boat from point A after 7 hours of travel will be 6 km.

Hence, option D is correct.

10. Let the speed of Boat be x km/hr

So the speed while going upstream will be $(x - 1)$ km/hr and the speed going downstream will be $(x + 1)$ km/hr

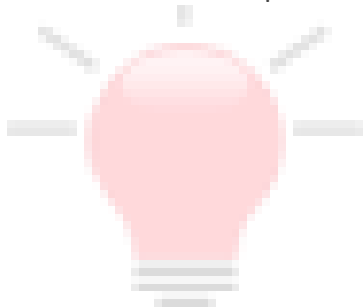
Since the distance travelled is the same, the equation can be formed as:

$$(x - 1) \times 5 = (x + 1) \times 2.5$$

$$\Rightarrow x = 3$$

The distance between A and B is $(3 + 1) \times 2.5 = 10$ km

Hence the correct option is (E).



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