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Boat and Stream Questions for CDS, CLAT & SSC Exams.

Boat and Stream Quiz 3

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

1. The speed of a boat when travelling downstream is 32 kmph whereas when travelling upstream it is 28 kmph. What is the speed of the boat in still water?

A. 27 kmph   B. 29 kmph   C. 31 kmph   D. None of these

2. If downstream speed of a boat is 16 kmph and its upstream speed is 11 kmph, what is the speed of stream?

A. 1.5 kmph   B. 2 kmph   C. 3 kmph   D. 2.5 kmph

3. A man can swim 3 km/hr in still water. If the velocity of the stream is 2 km/hr, the time taken by him to swim to a place 10 km upstream and back is:

A. $9\frac{1}{3}$ hr.   B. 10 hr.   C. 12 hr.   D. $8\frac{1}{3}$ hr.

4. A person can row 7 1/2 km an hour in still water and he finds that it takes him twice as long to row up as to row down the river. The speed of the stream is:

A. 2 km/hr   B. 3 km/hr   C. $2\frac{1}{2}$ km/hr   D. $3\frac{1}{2}$ km/hr

5. A man rows 8 km/h in still water. If the river is running at 2 km/h, it takes 32 min to row to a place and back. How far is the place?

A. 1.5 km   B. 2.5 km   C. 2 km   D. 3 km

6. A boat can travel with a speed of 13 km/hr in still water. If the speed of stream is 4 km/hr in the same direction, time taken by boat to go 63 km in opposite direction is:

A. $3\frac{9}{17}$ km/hr   B. 4 hrs   C. 7 hrs   D. 9 hrs

7. A sailor sails a distance of 48 km along the flow of a river in 8 h. If it takes 12 h to return the same distance, then the speed of the flow of the river is

A. 0.5 km/hr   B. 1 km/hr   C. 1.5 km/hr   D. 2 km/hr

8. A man rows downstream 32 km and 14 km upstream, and he takes 6 hours to cover each distance. What is speed of the current?

A. 0.5 km/hr   B. 1 km/hr   C. 1.5 km/hr   D. 2 km/hr

9. A boat covers a distance of 30 km downstream in 2 hours while it take 6 hours to cover the same distance upstream. If the speed of the current is half of the speed of the boat then what is the speed of the boat in km per hour ?

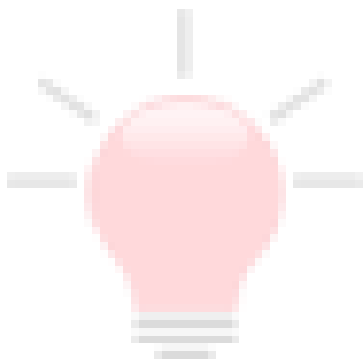A. 15 kmph   B. 5 kmph   C. 10 kmph   D. None of these

10. Muskan can row 16 kmph in still water. It takes her thrice as long to row up as to row down the river. Find the difference between her speed in still water and that of the stream.

A. 8 kmph   B. 16 kmph   C. 24 kmph   D. 12 kmph

Correct Answers:

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

Explanations:

1. To solve this question, we can apply a short trick approach

x = $\frac{1}{2}$(boat's rate with current + his rate against current)

Given,
x is the boat's rate in still water
By the short trick approach, we get

x = $\frac{1}{2}$(32 + 28) = $\frac{60}{2}$ = 30 km/hr

Hence, option D is correct

2. To solve this question, we can apply a short trick approach;
Speed of current

= $\frac{1}{2}$(Rate of downstream – Rate of upstream)

By the short trick approach, we get

= $\frac{1}{2}$(16 – 11) = $\frac{5}{2}$ = 2.5 kmph.

Hence, option D is correct.

3. To solve this question, we can apply a short trick approach;

Time = $\left[\dfrac{2 \times \text{Distance} \times \text{Speed in still water}}{(\text{Speed in still water})^2 - (\text{Speed of current})^2}\right]$hrs.

By the short trick approach, we get

= $\left(\dfrac{2 \times 10 \times 3}{(3)^2 - (2)^2}\right)$hrs

= $\dfrac{60}{9 - 4}$ = $\dfrac{60}{5}$ = 12 hrs

Hence, option C is correct.

4. To solve this question, we can apply a short trick approach;

$x\left(\dfrac{n-1}{n+1}\right)$ km/hr.

Given,

x = Person speed = $7\dfrac{1}{2} = \dfrac{15}{2}$ km

n = the no. of times of hours taken by the boat in the 2nd scenario (upstream) = 2
By the short trick approach, we get

$\dfrac{15}{2}\left(\dfrac{2-1}{2+1}\right) = \dfrac{15}{2} \times \dfrac{1}{3} = 2\dfrac{1}{2}$ km/hr.

Hence, option C is correct.

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5. To solve this question, we can apply a short trick approach;
A person can row a a speed of 'x' in still water. If stream is flowing at a speed of 'y', it takes time 'T' to row to a place and back, then distance

between two placed is given by $\dfrac{T(x^2 - y^2)}{2x}$.

Given,

Total Time (T) = 32 min = $\dfrac{32}{60} = \dfrac{8}{15}$ hr

By the short trick approach, we get

$= \left[\dfrac{8/15 \times \{(8)^2 - (2)^2\}}{2 \times 8}\right]$ km $= \dfrac{8 \times \{64 - 4\}}{15 \times 2 \times 8}$

$= \dfrac{8 \times 60}{15 \times 16} = 2$ km

Hence, option C is correct.

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6. Speed of boat = 13 km/hr, Speed of stream = 4 km/hr
Therefore, Speed of boat upstream = 13 − 4 = 9 km/hr Therefore, time taken by boat to cover 63 km upstream

$= \dfrac{63}{9} = 7$ hrs.

Hence, option C is correct.

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7. Rate downstream = $\dfrac{48}{8} = 6$ km/hr,

Rate upstream = $\dfrac{48}{12} = 4$ km/hr

Speed of current = $\dfrac{1}{2}$ [Downstream rate – Upstream rate]

= 1 [6 – 4]
2 Speed of the current = 1 km/hr.
Hence, option B is correct.

8.

Rate downstream = $\dfrac{32}{6}$ km/hr,

Rate upstream = $\dfrac{14}{6}$ km/hr

Speed of current = $\dfrac{1}{2}$[Downstream rate – Upstream rate]

$= \dfrac{1}{2}\left[\dfrac{32}{6} - \dfrac{14}{6}\right]$

$= \dfrac{1}{2}\left[\dfrac{32-14}{6}\right] = \dfrac{1}{2} \times \dfrac{18}{6}$

$= \dfrac{3}{2} = 1.5$ km/hr.

Hence, option C is correct.

9. Here downstream speed = 15 km/hr and upstream speed = 5 km/hr

∴ Speed of the boat = $\dfrac{15+5}{2}$ = 10 km/h

Hence, option C is correct.

10. Let Muskan speed upstream be x kmph

So, her speed downstream will be 3x kmph

According to the question,

$\dfrac{x+3x}{2}$ = 16 ⇒ x = 8 kmph

So, upstream speed = x = 8 kmph
Downstream speed = 3x = 24 kmph

Speed of stream = $\dfrac{24-8}{2}$ = 8 kmph

∴ Difference between speed of Muskan and that of stream = 16 – 8 = 8 kmph.

Hence, option A is correct.