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

## Boat and Stream Quiz 2

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

**1. A boat covers 24 km upstream and 36 km downstream in 6 hours while it covers 36 km upstream and 24 km downstream in 6.5 hours. The velocity of the current is:**

A. 1 km/hr B. 1.5 km/hr C. 2 km/hr D. 2.5 km/hr

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**2. A man can row 7.5 kmph in still water, if the river is running at 1.5 km an hour. It takes him 50 mins to row to a place and back, how far off is the place?**

A.1 km B. 2 km C. 3 km D. 4 km

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**3. A man can row upstream at 7 kmph and downstream at 10 kmph. Find man's rate still water and the rate of current.**

A. 4 km/hr and 1 km/hr B. 8.5 km/hr and 1.5 km/hr
C. 6 km/hr and 2 km/hr D. 6 km/hr and 3 km/hr

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**4. A man can row 40 km upstream and 55 km downstream in 13 hours, also he can row 30 km upstream and 44 km downstream in 10 hours. Find the speed of the man in still water and the speed of the current.**

A. 8 kmph and 2 kmph B. 8 kmph and 3 kmph
C. 7 kmph and 5 kmph D. 4 kmph and 7 kmph

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**5. If a boat goes 7 km upstream in 42 minutes and the speed of the stream is 3 kmph then the speed of the boat in still water is:**

A. 4.2 km/hr B. 9 km/hr C. 13 km/hr D. 21 km/hr

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**6. A man can row 9 1/3 kmph in still water and finds that it takes him thrice as much time to row up than as to row down the same distance in the river. The speed of the current is:**

A. $3\frac{1}{3}$ km/hr B. $3\frac{1}{9}$ km/hr C. $4\frac{1}{2}$ km/hr D. $4\frac{2}{3}$ km/hr

**7. Speeds of a boat along and against the current are 12 km/hr and 8 km/hr respectively. Then the speed of the current in km/hr is**

A. 5 km/hr B. 4 km/hr C. 3 km/hr D. 2 km/hr

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**8. A man rows down a river 15 km in 3 hrs with the stream and back in 7 1/2 hrs The rate at which he rows in still water is**

A. 2 hrs B. 4 hrs C. 6 hrs D. 9 hrs

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**9. A man can row 5 km/h in still water. If the speed of the current is 1 km/h, it takes 3h more in upstream than in the downstream for the same distance. The distance is:**

A. 36 km B. 24 km C. 20 km D. 32 km

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**10. A boatman goes 2 km against the current of the stream in 1 h and goes 1 km along the current in 10 min. How long will he take to go 5 km in stationary water?**

A. 1 h 30 min B. 1 h 15 min C. 1 h D. 40 min

**Correct Answers:**

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

**Explanations:**

**1.** Let the upstream = x kmph and rate downstream = y kmph.

Then, $\frac{24}{x}+\frac{36}{y}=6$ ....(i) and $\frac{36}{x}+\frac{24}{y}=\frac{13}{2}$ .....(ii)

Adding (i) and (ii) we get:

$=60\left(\frac{1}{x}+\frac{1}{y}\right)=\frac{25}{2}$ or $\frac{1}{x}+\frac{1}{y}=\frac{5}{24}$ ....(iii)

Subtracting (i) and (ii), we get:

$=12\left(\frac{1}{x}-\frac{1}{y}\right)=\frac{1}{2}$ or $\frac{1}{x}-\frac{1}{y}=\frac{1}{24}$ ...(iv)

Adding (iii) and (iv), we get $\frac{2}{x}=\frac{6}{24}$ or $x = 8$.

So, $\frac{1}{8}+\frac{1}{y}=\frac{5}{24}\Leftrightarrow\frac{1}{y}=\left(\frac{5}{24}-\frac{1}{8}\right)=\frac{1}{12}\Leftrightarrow y = 12.$

$\therefore$ Speed upstream = 8 kmph, Speed downstream = 12 kmph.

Hence, rate of current $\frac{1}{2}(12-8)$ kmph = 2 kmph.

Hence, option C is correct.

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**2.** Speed downstream = (7.5 + 1.5) kmph = 9 kmph;

Speed upstream = (7.5 – 1.5) kmph = 6 kmph. Let the required distance be x km. Then,

$\frac{x}{9}+\frac{x}{6}=\frac{50}{60}\Leftrightarrow 2x+3x=\left(\frac{5}{6}\times 18\right)\Leftrightarrow 5x=15\Leftrightarrow x=3.$

Hence, the required distance is 3 km.

Hence, option C is correct.

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**3.**

Rate in still water = $\frac{1}{2}(10+7)$ km/hr = 8.5 km/hr

Rate of current = $\frac{1}{2}(10-7)$ km/hr = 1.5 km/hr.

Hence, option B is correct.

**4.** Let rate upstream = x km/hr and rate downstream = y km/hr.

Then, $\frac{40}{x} + \frac{55}{y} = 13$ ... (i) and

$\frac{30}{x} + \frac{44}{y} = 10$ .... (ii)

Multiplying (ii) by 4 and (i) by 3 and subtracting,

we get: $\frac{11}{y} = 1$ or y = 11.

Substituting y = 11 in (i), we get: x = 5.

∴ Rate in still water = $\frac{1}{2}(11 + 5)$ kmph = 8 kmph.

Rate in current = $\frac{1}{2}(11 - 5)$ kmph = 3 kmph.

Hence, option B is correct.

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**5.**

Rate upstream = $\left(\frac{7}{42} \times 60\right)$ kmph = 10 kmph.

Speed of stream = 3 kmph

Let speed in still water be x km/hr. Then, speed upstream = (x – 3) km/hr.

∴ x – 3 = 10 OR x = 13 km/hr.

Hence, option C is correct.



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

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

Given,

x = Person speed = $9\frac{1}{3} = \frac{28}{3}$km/hr

n = the no. of times of hours taken by the boat in the 2nd scenario (upstream) = 3

By the short trick approach, we get

$\frac{28}{3}\left(\frac{3-1}{3+1}\right) = \frac{28}{3} \times \frac{2}{4} = \frac{14}{3} = 4\frac{2}{3}$km/hr.

Hence, option D is correct.

**7.** 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
$= \frac{1}{2}(12 - 8) = \frac{1}{2} \times 4 = 2$ km/hr
Hence, option D is correct.

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**8.** To solve this question, we can apply a short trick approach;
$x = \frac{1}{2}$ (man's rate with current + his rate against current)

Given,
x is the man's rate in still water
Distance = 15 km
Man's rate with current = $\frac{15}{3} = 5$ km/hr

Man's rate against current = $\frac{15}{15/2} = 2$km/hr

By the short trick approach, we get
$x = \frac{1}{2}(5 + 2) = \frac{7}{2} = 3.5$ km/hr
Hence, option C is correct.

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**9.** To solve this question, we can apply a short trick approach;
A man can row x kmph in still waters. If the river is running at y kmph, it takes T hrs more in upstream then to go downstream for the same distance, then the distance is given

$$\text{by } \left[\frac{(x^2 - y^2)\,T}{2y}\right] \text{km}$$

By the short trick approach, we get

$= \left[\frac{(5^2 - 1^2) \times 3}{2 \times 1}\right]$km $= \frac{72}{2} = 36$ km

Hence, option A is correct.

**10.** Rate downstream

$= \left(\frac{1}{10} \times 60\right)$km/hr = 6 km/hr;

Rate upstream = 2 km/hr.
Speed in still water
$= \frac{1}{2}(6 + 2)$ km/hr = 4 km/hr.

∴ Required time
$= \left(\frac{5}{4}\right)$hrs = $1\frac{1}{4}$hrs = 1 hr 15 min

Hence, option B is correct.