

## **Boats and Stream Questions for IBPS PO Prelims**

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## Questions

#### Instructions

For the following questions answer them individually

### **Question 1**

A boat can cover 336 km distance downstream in 4.2 hours. The same boat can cover the same distance in still water in 6.72 hours. Find out the speed of the stream.

- **A** 35 km/h
- **B** 25 km/h
- C 40 km/h
- **D** 30 km/h

Answer: D

## **Explanation:**

The same boat can cover the same distance in still water in 6.72 hours.

Speed of the boat in still water =  $\frac{336}{6.72}$  = 50 km/h

A boat can cover 336 km distance downstream in 4.2 hours.

336

50+speed of the stream = 4.2

80 = 50 + speed of the stream

speed of the stream = 80-50 = 30 km/h

Hence, option d is the correct answer.

#### **Question 2**

A boat covers a 20 km distance towards downstream in 4 hours. If the speed of the boat is 1.5 times the speed of the current then find the time taken by the boat to cover the same distance in upstream.

- A 22 hours
- B 20 hours
- C 25 hours
- D Can't be determined

Answer: B

## **Explanation:**

Let the speed of the boat and speed of the stream be x km/hr and y km/hr respectively

ATQ,

Distance = Speed x Time

Upstream speed = x-y

Downstream speed = x+y

20 = 4(x+y)

x+y = 5

Given x=1.5y,

So

1.5y + y = 5

2.5y = 5

y = 2km/hr

x = 3 km/hr

Time taken to cover 20 km in upstream, let it be 'T'

20 = T(x-y)

 $20 = T \times 1$ 

T = 20 hours

#### Question 3

If the ratio between the time taken by the boat to cover 280 km distance in upstream to the same distance in downstream is 5:2 respectively. The speed of the stream is 42.85% of the speed of a boat. Find out the speed of the boat.

- **A** 7 km/h
- **B** 14 km/h
- **C** 6 km/h
- D Cannot be determined.

Answer: D

### **Explanation:**

The speed of the stream is 42.85% of the speed of a boat.

Let's assume the speed of a boat is 7y.

Speed of stream = 42.85% of 7y

$$= (3/7) \text{ of } 7y$$

If the ratio between the time taken by the boat to cover 280 km distance in upstream to the same distance in downstream is 5:2 respectively.

Let's assume the time taken by the boat in upstream to downstream is 5t and 2t respectively.

Upstream  $\Rightarrow 7y-3y = 5t$ 

$$4y = 5t$$

Downstream 
$$\Rightarrow 7y+3y = 2t$$

$$10y = 2t$$

Here Eq.(i) and Eq.(ii) are the same. So from the given information, we cannot determine the speed of the boat.

Hence, option d is the correct answer.

#### **Question 4**

A boat can cover 720 km distance downstream in 40 hours. The speed of boat in still water is double the speed of the stream. Then find out the time taken by boat to cover 480 km distance in upstream.

- A 100 hours
- **B** 60 hours
- C 40 hours
- **D** 80 hours

Answer: D

## **Explanation:**

Let's assume the speed of boat in still water and the speed of stream is B and C respectively.

A boat can cover 720 km distance downstream in 40 hours.

B+C = 
$${720}\atop{40}$$

$$B+C = 18 \text{ km/h Eq.(i)}$$

The speed of boat in still water is double the speed of stream.

$$B = 2C Eq.(ii)$$

2C+C = 18 km/h

3C = 18 km/h

C = 6 km/h Eq.(iii)

Put Eq.(iii) in Eq.(ii).

B =  $2 \times 6 = 12 \text{ km/h}$ 

The time taken by boat to cover 480 km distance in upstream = B-C

= 12-6

- 480
- = 80 hours

Hence, option d is the correct answer.

**Question 5** 

A boat can travel 72 km against the stream in 8 hours. If the speed of the stream is 3 rd of the speed of the boat upstream, then the time taken by the boat to travel 285 km along the stream is:

- 17.25 hours
- 18.5 hours
- 21 hours
- 19 hours

Answer: D

### **Explanation:**

72

Speed of the boat upstream = 8 = 9 km/hr.

Speed of the stream =  $3 \times 9 = 3$  km/hr.

Speed of the boat in still water = 9+3 = 12 km/hr.

Speed of the boat downstream = 12+3 = 15 km/hr.

285

Hence, The time taken by the boat to travel 285 km downstream = ~15~=19 hours.

## **Question 6**

A boat can cover 390 km distance upstream in 78 hours. The speed of the stream is 44.44% of the speed of the boat. Then find out the time taken by boat to cover the same distance downstream.

- 30 hours
- 35 hours
- 25 hours
- 20 hours

Answer: A

## **Explanation:**

Let's assume the speed of the boat in still water is B and the speed of the stream is C.

The speed of the stream is 44.44% of the speed of the boat.

$$C = 44.44\%$$
 of B

$$C=rac{4}{9} imes B$$
 Eq.(i)

A boat can cover 390 km distance upstream in 78 hours.

$$_{78}^{390} = B - C$$

$$B - C = 5 Eq.(ii)$$

Put Eq.(i) in Eq.(ii).

$$B - \frac{4}{9} \times B = 5$$

$$\stackrel{5}{9} imes B = 5$$

B = 9 km/h Eq.(iii)

Put Eq.(iii) in Eq.(ii).

$$C = 9 - 5 = 4 \text{ km/h}$$

Time taken by boat to cover the same distance downstream =  $\begin{array}{c} 390 \\ 9+4 \end{array}$ 

= 30 hours

Hence, option a is the correct answer.

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#### **Ouestion 7**

The speed of a boat downstream is five times the speed of the stream. If the boat can travel 120 km in 5 hours while in upstream, then find the time taken by the boat to travel 480 km downstream and 180 km upstream.

- **A** 19.5 hours
- **B** 16.8 hours
- **C** 12.75 hours
- **D** 18.5 hours

### Answer: A

## **Explanation:**

Let the speed of the stream be 'x' km/hr. Speed of the boat downstream = 5x km/hr. Speed of the boat in still water = 5x-x = 4x km/hr. Speed of the boat upstream = 4x-x = 3x km/hr.

120

Given, 
$$5 = 3x \Rightarrow x = 8$$
.

Speed of the boat upstream = 3x = 24 km/hr. Speed of the boat downstream = 5x = 40 km/hr.

480 180

Hence, Time taken by the boat to travel 480 km downstream and 180 km upstream = 40 + 24 = 12 + 7.5 = 19.5 hours.

## **Question 8**

A boat travels 82 km downstream and returns. If speed of the boat is 25 km/hr and speed of the stream is 8km/hr then the time taken by the boat to reach back its starting point is \_\_\_\_\_?

- **A** 5.3 hr
- **B** 6.3 hr
- **C** 7.3 hr
- **D** 8.3 hr

## Answer: C

#### **Explanation:**

Relative speed of boat in downstream = 25 + 8 = 33 km/hr Time taken by boat to cover 82 km in downstream = 82/33 = 2.48 hr Boat returns its starting point so, Relative speed of boat in upstream = 25 - 8 = 17 km/hr

Time taken by boat to cover 82 km in upstream = 82/17 = 4.82 hr

Total time = 2.48 + 4.82 = 7.3 hours

#### **Question 9**

A boat covers a 28 km distance towards upstream in 4 hours. If the speed of the boat is three times the speed of the current then find the time taken by the boat to cover the 56km distance downstream.

- A 2 hour
- **B** 4.5 hour
- C 4 hour
- **D** 3.5 hour

Answer: C

#### **Explanation:**

Let the speed of the boat and speed of the stream be x km/hr and y km/hr respectively.

ATO

Distance = Speed x Time

Upstream speed = x-y

Downstream speed = x+y

28 = 4(x-y)

Given x=3y,

So,

28 = 4(3y-y)

28 = 8y

y = 3.5 km/hr

x = 10.5 km/hr (as, x = 3y)

Time taken to cover 56 km in downstream, let it be 'T'

56 = T(x+y)

56 = 4y x T

T = 56/14

T = 4 hour.

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## Question 10

Total time taken by a boat to cover 136km in downstream and 60km in upstream is 32 hours. If the speed of the boat in still water is three times the speed of stream. Then what is the downstream speed of that boat?

- A 6 km/hr
- **B** 12 km/hr
- C 8 km/hr
- **D** 10 km/hr

Answer: C

## **Explanation:**

Let's assume the Speed of boat in still water and speed of stream is B and C respectively.

So upstream speed will be (B-C) and downstream speed will be (B+C).

Total time taken by a boat to cover 136km in downstream and 60km in upstream is 32 hours.

136 60

B + C + B - C = 32 Eq.(1)

If the speed of boat is three times the speed of stream.

$$B = 3C Eq.(2)$$

$$3C + C + 3C - C = 32$$

$$4C + 2C = 32$$

$$C + C = 32$$

64

$$C = 32$$

64

$$32 = C$$

C = 2km/hr. Eq.(3)

Put Eq.(3) in Eq.(2).

 $\mathsf{B}$  =  $3 \times 2$ 

B = 6 km/hr. Eq.(4)

Downstream speed of that boat = (B+C)

Put Eq.(4) and Eq.(3) here.

(6+2)km/hr.

8 km/hr.

Hence, option c is the correct answer.

## **Question 11**

Speed of a boat while travelling along the stream and against the stream are in the ratio 5: 3. If the speed of the stream is 8 km/hr, then in how much time can the boat travel 32 km when the water is still?



**B** 1 hour

**C** 2.25 hours

**D** 1.75 hours

Answer: B

## **Explanation:**

Let the speed of the boat downstream = 5x km/hr.

Speed of the boat upstream = 3x km/hr.

$$5x + 3x$$

Then, The speed of the boat in still water = 2 = 4x km/hr.

Speed of the stream = Speed of the boat in Still water - Speed of the boat upstream = Speed of the boat downstream - Speed of the boat in still water = 4x-3x (or) 5x-4x = x km/hr.

Given, x = 8 km/hr.

Then, Speed of the boat in Still water = 4x = 4\*8 = 32 km/hr.

Therefore, The boat can travel 32 km in 1 hour when the water is still.

#### **Question 12**

Speed of boat in still water is 125% more than the speed of stream. Total time taken by boat to cover 260km in downstream and same distance in upstream is 72 hours. Then find out the speed of the boat in still water?

A 10 km/hr

**B** 12 km/hr

## **Explanation:**

Let's assume the speed of the boat in still water is B and speed of stream is C.

Speed of the boat in still water is 125% more than the speed of stream.

$$B = (100 + 125)\%$$
 of C

$$B = {}^{225}_{100} \times C$$

$$B = {9 \atop 4} \times C$$

$$B={9\atop4}C$$
 Eq.(1)

Total time taken by boat to cover 260km in downstream and same distance in upstream is 72 hours.

$$B + C + B - C = 72$$
 Eq.(2)

Put Eq.(1) in Eq.(2). 
$$260 \qquad 260 \\ {}^9_4C+C + {}^9_4C-C = 72$$

$${260 \atop (9+4)}\atop 4}C + {260 \atop (9-4)}\atop 4}C = 72$$

$${ 260 \atop {}^{(13)}C} + { 260 \atop {}^{(5)}C} = 72$$

$$13C + 5C = 72$$

$$1C + 1C = 72$$

288

$$1C = 72$$

288

$$C = 72 = 4 \text{ km/hr. Eq.}(3)$$

Put Eq.(3) in Eq.(1).

$$B = {}^{9}_{4}C$$

$$B = {\stackrel{9}{4}} \times 4$$

Speed of the boat in still water = B = 9 km/hr.

Hence, option d is the correct answer.

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### **Question 13**

A boat covers a 30 km distance towards downstream in 4 hours. If the speed of the boat is two times the speed of the current then find the time taken by the boat to cover the same distance in upstream?

12hour

14.5hour

### **Explanation:**

Let the speed of the boat and speed of the stream be x km/hr and y km/hr respectively.

ATO.

Distance = Speed x Time

Upstream speed = x-y

Downstream speed = x+y

30 = 4(x+y)

Given x=2y,

So,

30 = 4(2y+y)

30 = 12y

y = 2.5 km/hr

x = 5 km/hr (as, x = 2y)

Time taken to cover 30 km in upstream, let it be 'T'

30 = T(x-y)

 $30 = y \times T$ 

T = 30/2.5

T = 12 hour.

### **Question 14**

If a boat's speed is increased by 50% then it can cover 25% more distance than at its normal speed taking 1 hour less than its original time in still water. Find the time taken by the boat to cover its actual distance?



## D Can't be determined

Answer: B

## **Explanation:**

Let the speed of the boat be 'V' km/hr and distance be 'D' km and time be 'T' hour

ATQ,

D = VT --(i)

1.25D = 1.5V(T-1)

5D = 6V(T-1) ----(ii)

Putting D = VT from eq (i) in eq (ii), we get

5VT = 6V(T-1)

5T = 6(T-1)

5T = 6T - 6

T = 6 hour.

## Question 15

A boat covers 20 km downstream distance in 2 hours and the ratio of upstream speed to the speed of the current is 2:3. Find the speed of the boat in still water.



## **Explanation:**

Let the speed of the boat be x km/hr and speed of current be y km/hr

ATQ,

$$20 = 2(x+y)$$

$$x+y = 10 ---(i)$$

$$(x-y)/y = 2:3$$

$$3x-3y = 2y$$

$$3x = 5y$$

$$y = 3x/5 ---(ii)$$

Putting eq (ii) value in eq (i) we get

$$x + 3x/5 = 10$$

$$8x = 50$$

$$x = 50/8$$

$$x = 6.25 \text{ km/hr}$$

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## Question 16

In a river, Speed of boat in still water is 36km/h and speed of current is  $\frac{1}{9}$  of the speed of the boat. Distance covered by the boat in downstream during 4 hours is 32km more than the distance covered by boat in upstream during 4 hours. Then find out the distance covered by boat in upstream during 4 hours?

- **A** 128km
- **B** 160km
- **C** 150km
- **D** 148km

## Answer: A

### **Explanation:**

Speed of boat in still water = B = 36 km/h Eq.(1)

Speed of current is  $\frac{1}{9}$  of the speed of the boat.

Speed of current = C =  $\frac{1}{9}$  of 36km/h =  $\frac{1}{9} \times 36$  = 4km/h Eq.(2)

Speed of boat in downstream = (B+C) = (36+4) = 40 Eq.(3)

Speed of boat in upstream = (B-C) = (36-4) = 32 Eq.(4)

Distance covered by the boat in downstream during 4 hours is 32km more than the distance covered by boat in upstream during 4 hours.

So let's assume distance covered by boat in upstream = d Eq.(5)

Then distance covered by boat in downstream = (d+32) Eq.(6)

As per the question time is equal.

$$Eq.(5)$$
  $Eq.(6)$ 

$$Eq.(4) \equiv Eq.(3)$$

$$d (d+32)$$

$$32 = 40$$

$$d (d+32)$$

$$4 = 5$$

$$5d = 4(d+32)$$

$$5d = 4d + 128$$

5d-4d = 128



d = 128km

Hence, option a is the correct answer

#### **Question 17**

In a river, the speed of a boat is six times the speed of stream. Time taken by boat to cover the same distance in upstream and downstream is 14 hours and T hours respectively. Then find out the value of T?

- A 10 hours
- B 12 hours
- C 11 hours
- **D** 9 hours

Answer: A

### **Explanation:**

Let's assume the speed of a boat is B and speed of stream is C.

So upstream speed = (B - C)

And downstream speed = (B + C)

In a river, the speed of a boat is six times the speed of stream.

So B = 6C Eq.(1)

Time taken by boat to cover the same distance in upstream and downstream is 14 hours and T hours respectively.

$$14(B - C) = T(B + C) Eq.(2)$$

Put Eq.(1) in Eq.(2).

14(6C - C) = T(6C + C)

$$14 \times 5C = T \times 7C$$

$$14 \times 5 = T \times 7$$

$$70 = T \times 7$$

$$T = {70 \atop 7}$$

T = 10 hours.

Hence, option a is the correct answer.

## **Question 18**

A boat can row 105km upstream in 6hr and same distance covered by that boat downstream in 4hr. Then what is the speed of that boat in still water?

- **A** 3.575 km/hr.
- **B** 4.375 km/hr.
- **C** 5.305 km/hr.
- **D** 6.105 km/hr.

Answer: B

## **Explanation:**

Let's assume the speed of the boat in still water is B.

Let's assume the speed of the stream is C.

So upstream and downstream speeds will be (B-C) and (B+C) respectively.

A boat can row 105km upstream in 6hr

(B-C) = 
$${105 \atop 6}$$

$$(B-C) = 17.5 Eq.(1)$$

Same distance covered by that boat downstream in 4hr.

$$(B+C) = {105 \atop 4}$$

$$(B+C) = 26.25 Eq.(2)$$

Subtract Eq.(1) from Eq.(2).

Speed of that boat in still water = C = 4.375 km/hr.

Hence, option b is the correct answer.

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#### **Question 19**

A boat can travel 10 km in 12 minutes when the water is still. If the ratio between the speeds of the boat in still water and the speed of the current is 5:1, then find the time taken by the boat to travel 80 km against the stream.

- A 3.5 hours
- **B** 2.75 hours
- C 2 hours
- **D** 1.25 hours

Answer: C

## **Explanation:**

 $\frac{10}{12}$ 

Speed of the boat in still water =  $\frac{60}{}$  = 50 kr

Speed of the boat in still water: Speed of the stream = 5:1.

Let the speed of the boat in still water = 5x km/hr

 $5x = 50 \Rightarrow x = 10$ .

Then, Speed of the stream = x = 10 km/hr.

Speed of the boat against the stream = Speed of the boat in still water - Speed of the stream = 50-10 = 40 km/hr.

80

Therefore, The boat can travel 80 km upstream in 40 = 2 hours.

## **Question 20**

A boat travels 30 km upstream in 10 hours and travels 52 km downstream in 4 hours. What is the time taken to cover 121 km downstream if the speeds of both stream and boat are decreased by 1 km/hr?

- A 12 hrs
- **B** 11 hrs
- **C** 10 hrs
- **D** 9 hrs

Answer: B

## **Explanation:**

let the speed of the boat be 'b' and stream be 's'.

30/(b-s) = 10

b-s=3

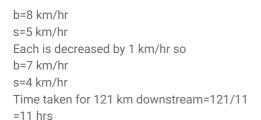
52/(b+s) = 4

b+s=13

b-s=3

2b=16





#### **Question 21**

A boat travels 120 km upstream in 6 hours and travels 90 km downstream with double the speed of upstream. What is the time taken to cover the 90km downstream?

- A 2 hr 10 min
- **B** 2 hr 15 min
- C 2 hr 20 min
- **D** 2 hr 30 min

Answer: B

#### **Explanation:**

let the speed of the boat be 'b' and stream be 's'.

120/(b-s) = 6

b-s=20

Given b+s=2(b-s)

b+s=2b-2s

3s=b

3s-s=20

2s=20

s = 10

b = 30

Time taken for 90 km downstream=90/40

=2.25 hrs

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## Instructions

## **Question 22**

A boat takes 4 hours to travel same distance 'x' upstream and downstream. If the speed of the boat is 4 km/hr and stream is 2 km/hr then find the value of x?

- A 6 km
- **B** 8 km
- **C** 4 km
- **D** 10 km

Answer: A

## **Explanation:**

Upstream speed =4-2=2 km/hr Downstream speed=4+2=6 km/hr Therefore we have  ${6\atop 6}+{2\atop 2}$ =6 4x/6 =4 x=6 km



#### Instructions

#### **Question 23**

A boat takes 10 hours to travel same distance 'x' upstream and downstream. If the speed of the boat is 10 km/hr and stream is 6 km/hr then find the value of x?

- **A** 24 km
- **B** 28 km
- **C** 30 km
- **D** 32 km

Answer: D

## Explanation;

Upstream speed =10-6=4 km/hr Downstream speed=10+6=16 km/hr Therefore we have  $\frac{x}{16} + \frac{x}{4}$ =10 5x/16 =10 x=32

### Instructions

For the following questions answer them individually

#### **Question 24**

A boat can travel with double the speed downstream than upstream. If the speed of current is 24 km/hr, then find the speed of the boat in still water.

- A 64 km/hr
- **B** 84 km/hr
- **C** 72 km/hr
- **D** 96 km/hr

Answer: C

### **Explanation:**

Let the speed of the boat upstream = 2x km/hr

Then the speed of the boat downstream = 4x km/hr

Then, Speed of boat in still water = (2x+4x)/2 = 6x/2 = 3x km/hr

Speed of current = Speed of boat in still water - Speed of boat upstream = 4x-3x = x km/hr

Given, x = 24 km/hr

Then, Speed of boat in still water = 3x = 3\*24 = 72 km/hr

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#### **Question 25**

Speed of a boat downstream is 5 times of the speed of boat upstream. Then find the speed of the boat in still water if speed of current is 12 km/hr.

- A 18 km/hr
- **B** 24 km/hr
- **C** 27 km/hr



Answer: A

## **Explanation:**

Let the speed of the boat upstream be x km/hr

Then, the speed of the boat downstream = 5x km/hrSpeed of the boat in still water = (x+5x)/2 = 6x/2 = 3x km/hrSpeed of current = Speed of boat in still water - Speed of boat upstream = 3x - x = 2x km/hrGiven, 2x = 12 km/hr  $\Rightarrow x = 6 \text{ km/hr}$ 

Then, Speed of boat in still water = 3x = 3\*6 = 18 km/hr

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