



Aptitude Class: 7

Date: 03.10.2016

**PERSONALITY DEVELOPMENT ASSOCIATION**

**MADRAS INSTITUTE OF TECHNOLOGY**

**ANNA UNIVERSITY – CHENNAI**

***“DISCOVER THYSELF”***

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**FORMULAE:**

1. Upstream speed( $U_s$ ) = Boat speed( $B_s$ )-Stream Speed( $S_s$ )
2. Downstream speed( $D_s$ ) = Boat speed( $B_s$ ) + Stream Speed( $S_s$ )
3. Boat Speed =  $(U_s + D_s) / 2$
4. Stream Speed =  $(U_s - D_s) / 2$

**PROBLEMS:**

1. A man can row upstream at 7 km/hr and downstream at 10 km/hr. Find the speed of man at still water?
2. A boat goes 15 km upstream in 1 hr 20 mins; the speed of the stream is 4 km/hr. Find the speed of boat in still water?
3. A boat covers a certain distance downstream in 5 hours, but takes 7 hours to return upstream to the starting point. If the speed of the stream be 5 km/hr, find the speed of the boat in still water?
4. A man can row 9 km/hr in still water, if the river running at 4 km/hr. It takes 6 hours more to go upstream than to go downstream for the same distance. How far the place?
5. A man can row at the rate of 5 km/hr in still water. If the time taken to row a certain distance upstream is 2 times as much as row the same distance downstream. Find the speed of the current?
6. The stream runs at 1 km/hr, a motor boat goes 35 km upstream and back again to the starting point after 12 hours. What is the speed of boat?
7. The ratio of speed of boat in still water to the speed of current is 6:1. If the upstream speed is 2 km/hr. Find the speed of boat in still water?
8. Boat covers 24 km upstream and 36 km downstream in 6 hrs. Same boat covers 36 km upstream and 24 km downstream it takes 3 1/2 hrs. Find the speed of stream?
9. A boat takes 90 mins less to travel 36 miles downstream than to travel the same distance upstream. If the speed of the boat in still water is 10 mph. Find the speed of the current?
10. A man takes twice as long to row a distance against the stream as to row the same distance in favour of the stream. The ratio of the speed of the boat (in still water) and the stream is:

11. A man can row three-quarters of a kilometre against the stream in  $11\frac{1}{4}$  mins and down the stream in  $7\frac{1}{2}$  mins. Find the speed of man (kmph)?
12. A boatman can row 96 km downstream in 8 hr. If the speed of the current is 4 km/hr find in what time will be able to cover 8 km upstream?
13. A boat takes 38 hrs for travelling downstream from point A to point B and coming back to point C midway between A & B. If the velocity of the stream is 4 km/hr and the speed of the boat in still water is 14 km/hr, What is the distance between A and B?
14. A boat running upstream takes 8 hrs 48 mins to cover a certain distance, while it takes 4 hrs to cover a same distance running downstream. What is the ratio between the speed of the boat in still water and speed of the current ?
15. 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 flows at 3 km/hr. Find his average speed for total journey?
16. At his usual rowing rate, Rahul can travel 12 miles downstream in a certain stream in 6 hours less than it takes him to the same distance upstream. But if he could double his usual rowing rate for his 24-mile round trip the downstream 12 miles would then take only one hour less than the upstream 12 miles. What is the speed of current in miles/hr?
17. There is a road beside a river. Two friends started from a place A, moved to a temple situated at another place B and then returned to A again. One of them moves on a cycle at a speed of 12 km/hr, while the other sails on a boat at a speed of 10 km/hr. If the river flows at a speed of 4 km/hr, which of the two friends will return to place A first?

