

Arithmetic (Level 2)

MCQ Test, Set 06

Time: 30 minutes

Maximum marks: 25

Name: _____ Class: _____ Date: _____

1. There are 25 questions. Each has exactly one correct answer: choose A, B, C or D.
2. Each correct answer carries 1 mark. There is no negative marking.
3. The key sheet and worked solutions are at the end of this test.

1. If A can finish a piece of work in 16 days, then A's 1 day's work is
A. 16 **B.** $\frac{1}{16}$ **C.** $\frac{15}{16}$ **D.** $\frac{1}{15}$
2. If the number of men to do a work is changed in the ratio 4 : 9, the time taken by them to finish the work changes in the ratio
A. 81 : 16 **B.** 16 : 81 **C.** 9 : 4 **D.** 4 : 9
3. A can do a piece of work in 28 days and B alone can do it in 70 days. How much time will both take to finish the work?
A. 49 days **B.** 42 days **C.** 98 days **D.** 20 days
4. A and B together can do a piece of work in 26 days. B alone can finish it in 39 days. In how many days can A alone finish the work?
A. 13 days **B.** $32\frac{1}{2}$ days **C.** $15\frac{3}{5}$ days **D.** 78 days
5. A, B and C together can finish a piece of work in 14 days. C and A together can finish it in 16 days. In how many days can B alone finish it?
A. 2 days **B.** 30 days **C.** 112 days **D.** 15 days
6. A can do a piece of work in 42 days and B can finish it in 14 days. They work together for 3 days and then A goes away. In how many days will B finish the remaining work?
A. 10 days **B.** 11 days **C.** $12\frac{2}{3}$ days **D.** 30 days
7. A can do a piece of work in 10 days and B in 24 days. They work together for 6 days. The rest of the work is finished by C in 4 days. If they get ₹1200 for the whole work, what is C's daily wage?
A. ₹180 **B.** ₹45 **C.** ₹120 **D.** ₹18
8. A is thrice as good a workman as B and is therefore able to finish a piece of work in 10 days less than B. How many days does A take to finish it alone?
A. 30 days **B.** $3\frac{1}{3}$ days **C.** 15 days **D.** 5 days
9. A can do a piece of work in 16 days, B in 35 days and C in 20 days. All begin together, but A leaves the work after 4 days and B leaves 4 days before the work is finished. How long did the work last?
A. 11 days **B.** 3 days **C.** 7 days **D.** 15 days

10. A and B can do a piece of work in 57 and 76 days respectively. They began the work together, but B leaves after some days and A finishes the remaining work in 36 days. After how many days did B leave?
- A. 12 days B. 48 days C. 28 days D. 21 days
-
11. A can do a piece of work in 140 days and B can do it in 64 days. They work together for 16 days. Then B leaves and A alone continues the work. 11 days after that, C joins A and the work is completed in 22 days more. In how many days can C do the work alone?
- A. 110 days B. 195 days C. 55 days D. 33 days
-
12. A and B together can do a piece of work in 12 days. B and C together can do it in 21 days. If A is twice as good a workman as C, C alone can do it in
- A. 84 days B. 9 days C. 14 days D. 28 days
-
13. A and B working alone can finish a piece of work in 15 and 7 days respectively. If they work at it alternately for a day, B beginning, in how many days will the work be finished?
- A. 10 days B. $9\frac{2}{7}$ days C. $9\frac{6}{11}$ days D. 9 days
-
14. A certain number of men complete a piece of work in 48 days. If there were 5 men more, the work could be finished in 15 days less. How many men were there originally?
- A. 6 B. 21 C. 11 D. 16
-
15. If 4 men or 10 boys can finish a piece of work in 19 days, in how many days can 12 men and 8 boys finish it?
- A. $72\frac{1}{5}$ days B. 5 days C. $9\frac{1}{2}$ days D. $3\frac{4}{5}$ days
-
16. 6 men and 3 women working 6 hours a day finish a piece of work in 10 days; 4 men and 3 women working 8 hours a day do the same work in 10 days. Find the number of days in which the work is done by 4 men only, working 4 hours a day.
- A. 20 days B. $33\frac{3}{4}$ days C. $39\frac{3}{8}$ days D. 30 days
-
17. If 3 men with 5 boys can earn ₹8340 in 12 days and 6 men with 6 boys can earn ₹4440 in 4 days, in what time will 4 men with 2 boys earn ₹6600?
- A. $5\frac{1}{2}$ days B. 9 days C. 11 days D. 13 days
-
18. 48 men are employed to do a piece of work which they could finish in 15 days, but the men drop off by 8 at the end of every 8 days. In what time will the work be completed?
- A. 15 days B. 18 days C. 24 days D. $16\frac{1}{2}$ days
-
19. A can do half as much again as B can do in the same time. A alone can do a piece of work in 28 days. In how many days can B alone finish it?
- A. 42 days B. $18\frac{2}{3}$ days C. 14 days D. 56 days
-
20. The speed of a boat in still water is 13.5 km/hr and the speed of the stream is 4 km/hr. The speed of the boat downstream is
- A. 4.75 km/hr B. 17.5 km/hr C. 13.5 km/hr D. 9.5 km/hr
-

21. A man rows upstream 41 km and downstream 65 km, taking 5 hours each time. The velocity of the current is
- A. 2.4 km/hr B. 10.6 km/hr C. 4.8 km/hr D. 5.8 km/hr
-
22. A man can row 9 km/hr in still water and he finds that it takes him thrice as long to row up as to row down the river. The rate of the stream is
- A. 3 km/hr B. 6.75 km/hr C. 4.5 km/hr D. 2.25 km/hr
-
23. A man can row 7.5 km/hr in still water. If the river is running at 3.5 km/hr, it takes him 1 hour 30 minutes to row to a place and back. The place is at a distance of
- A. 8.8 km B. 4.4 km C. 6 km D. 5.625 km
-
24. The current of a stream runs at the rate of 3 km/hr. A motor boat goes 15 km upstream and back again to the starting point in 55 minutes. The speed of the motor boat in still water is
- A. 33 km/hr B. 39 km/hr C. 36 km/hr D. 30 km/hr
-
25. A man can row 8 km upstream and 48 km downstream in 5 hours, while he can row 32 km upstream and 72 km downstream in 10 hours. The rate of the current is
- A. 8 km/hr B. 4 km/hr C. 2 km/hr D. 10 km/hr
-

Key sheet

1. B	2. C	3. D	4. D	5. C
6. A	7. B	8. D	9. A	10. A
11. C	12. D	13. B	14. C	15. B
16. D	17. C	18. D	19. A	20. B
21. A	22. C	23. B	24. A	25. C

Solutions

1. If A can finish a piece of work in 16 days, then A's 1 day's work is

A finishes the whole work in 16 days.

$$\therefore \text{A's 1 day's work} = \frac{1}{16}$$

Ans: (B) $\frac{1}{16}$

2. If the number of men to do a work is changed in the ratio 4 : 9, the time taken by them to finish the work changes in the ratio

$$\text{No. of men} \propto \frac{1}{\text{Time taken}}$$

$$\frac{T_1}{T_2} = \frac{M_2}{M_1} = \frac{9}{4}$$

$$\therefore T_1 : T_2 = 9 : 4$$

Ans: (C) 9 : 4

3. A can do a piece of work in 28 days and B alone can do it in 70 days. How much time will both take to finish the work?

$$\text{A's 1 day's work} = \frac{1}{28}$$

$$\text{B's 1 day's work} = \frac{1}{70}$$

$$\therefore (\text{A} + \text{B})\text{'s 1 day's work} = \frac{1}{28} + \frac{1}{70} = \frac{5+2}{140} = \frac{7}{140} = \frac{1}{20}$$

$\therefore$ Both together can finish the work in 20 days

Ans: (D) 20 days

4. A and B together can do a piece of work in 26 days. B alone can finish it in 39 days. In how many days can A alone finish the work?

$$(\text{A} + \text{B})\text{'s 1 day's work} = \frac{1}{26}$$

$$\text{B's 1 day's work} = \frac{1}{39}$$

$$\Rightarrow \text{A's 1 day's work} = \frac{1}{26} - \frac{1}{39} = \frac{3-2}{78} = \frac{1}{78}$$

$\therefore$ A alone can finish the work in 78 days.

Ans: (D) 78 days

5. A, B and C together can finish a piece of work in 14 days. C and A together can finish it in 16 days. In how many days can B alone finish it?

$$(\text{A} + \text{B} + \text{C})\text{'s 1 day's work} = \frac{1}{14}$$

$$(\text{C} + \text{A})\text{'s 1 day's work} = \frac{1}{16}$$

$$\text{B's 1 day's work} = (\text{A} + \text{B} + \text{C})\text{'s 1 day's work} - (\text{C} + \text{A})\text{'s 1 day's work}$$

$$= \frac{1}{14} - \frac{1}{16} = \frac{8-7}{112} = \frac{1}{112}$$

$\therefore$ B alone can finish the work in 112 days

Ans: (C) 112 days

6. A can do a piece of work in 42 days and B can finish it in 14 days. They work together for 3 days and then A goes away. In how many days will B finish the remaining work?

$$\text{A's 1 day's work} = \frac{1}{42}$$

$$\text{B's 1 day's work} = \frac{1}{14}$$

$$(\text{A} + \text{B})\text{'s 1 day's work} = \frac{1}{42} + \frac{1}{14} = \frac{1+3}{42} = \frac{4}{42} = \frac{2}{21}$$

$$(\text{A} + \text{B})\text{'s 3 days' work} = 3 \times \frac{2}{21} = \frac{2}{7}$$

$$\text{Remaining work} = 1 - \frac{2}{7} = \frac{5}{7}$$

$$\text{This work is done by B in } \frac{5}{7} \times 14 = 10 \text{ days}$$

Ans: (A) 10 days

7. A can do a piece of work in 10 days and B in 24 days. They work together for 6 days. The rest of the work is finished by C in 4 days. If they get ₹1200 for the whole work, what is C's daily wage?

$$\text{A's 1 day's work} = \frac{1}{10}, \text{ B's 1 day's work} = \frac{1}{24}$$

$$(\text{A} + \text{B})\text{'s 1 day's work} = \frac{1}{10} + \frac{1}{24} = \frac{12+5}{120} = \frac{17}{120}$$

$$(\text{A} + \text{B})\text{'s 6 days' work} = \frac{17}{20}$$

$$\text{Remaining work} = 1 - \frac{17}{20} = \frac{3}{20}, \text{ done by C in 4 days}$$

$$\text{A's 6 days' work} = \frac{6}{10} = \frac{3}{5}, \text{ B's 6 days' work} = \frac{6}{24} = \frac{1}{4}, \text{ C's 4 days' work} = \frac{3}{20}$$

$$\text{Consider } \frac{3}{5} : \frac{1}{4} : \frac{3}{20} = 12 : 5 : 3$$

$$\text{A's share} = 12 \times \frac{1200}{20} = 720, \text{ i.e. ₹720}$$

$$\text{B's share} = 5 \times \frac{1200}{20} = 300, \text{ i.e. ₹300}$$

$$\text{C's share} = 3 \times \frac{1200}{20} = 180, \text{ i.e. ₹180}$$

$$\text{C's daily wage} = \frac{180}{4} = 45, \text{ i.e. ₹45}$$

Ans: (B) ₹45

8. A is thrice as good a workman as B and is therefore able to finish a piece of work in 10 days less than B. How many days does A take to finish it alone?

Suppose B finishes the work in x days

$\Rightarrow$ A is able to finish it in $(x - 10)$ days

Time taken by A = $\frac{1}{3}$ (Time taken by B)

$$\therefore x - 10 = \frac{1}{3}x$$

$$\Rightarrow 3x - 30 = x \Rightarrow 2x = 30 \Rightarrow x = 15$$

$\therefore$ Time taken by B = 15 days, time taken by A = 5 days

Ans: (D) 5 days

9. A can do a piece of work in 16 days, B in 35 days and C in 20 days. All begin together, but A leaves the work after 4 days and B leaves 4 days before the work is finished. How long did the work last?

$$\text{A's 1 day's work} = \frac{1}{16}, \text{ B's} = \frac{1}{35}, \text{ C's} = \frac{1}{20}$$

A, B, C together work for 4 days; C alone works for the last 4 days; B and C work together in between.

$$(\text{A} + \text{B} + \text{C})\text{'s 1 day's work} = \frac{1}{16} + \frac{1}{35} + \frac{1}{20} = \frac{35+16+28}{560} = \frac{79}{560}$$

$$(\text{A} + \text{B} + \text{C})\text{'s 4 days' work} = 4 \times \frac{79}{560} = \frac{79}{140}$$

$$\text{C's 4 days' work} = 4 \times \frac{1}{20} = \frac{1}{5}$$

$$\text{Remaining work} = 1 - \left(\frac{79}{140} + \frac{1}{5} \right) = \frac{33}{140}$$

$$(\text{B} + \text{C})\text{'s 1 day's work} = \frac{1}{35} + \frac{1}{20} = \frac{4+7}{140} = \frac{11}{140}$$

$$\text{Remaining work is done by (B + C) in } \frac{33}{140} \div \frac{11}{140} = 3 \text{ days}$$

$$\text{Total time} = 4 + 3 + 4 = 11 \text{ days}$$

Ans: (A) 11 days

10. A and B can do a piece of work in 57 and 76 days respectively. They began the work together, but B leaves after some days and A finishes the remaining work in 36 days. After how many days did B leave?

$$\text{A's 1 day's work} = \frac{1}{57}, \text{ B's 1 day's work} = \frac{1}{76}$$

$$(\text{A} + \text{B})\text{'s 1 day's work} = \frac{1}{57} + \frac{1}{76} = \frac{4+3}{228} = \frac{7}{228}$$

$$\text{A's 36 days' work} = 36 \times \frac{1}{57} = \frac{12}{19}$$

$$\text{Remaining work} = 1 - \frac{12}{19} = \frac{7}{19}$$

$$(\text{A} + \text{B})\text{'s } x \text{ days' work} = \frac{7}{19} \Rightarrow \frac{7}{228} \times x = \frac{7}{19}$$

$$x = 12, \text{ so B left after 12 days}$$

Ans: (A) 12 days

11. A can do a piece of work in 140 days and B can do it in 64 days. They work together for 16 days. Then B leaves and A alone continues the work. 11 days after that, C joins A and the work is completed in 22 days more. In how many days can C do the work alone?

$$\text{A's 1 day's work} = \frac{1}{140}, \text{ B's 1 day's work} = \frac{1}{64}$$

$$(\text{A} + \text{B})\text{'s 1 day's work} = \frac{1}{140} + \frac{1}{64} = \frac{16+35}{2240} = \frac{51}{2240}$$

$$(\text{A} + \text{B})\text{'s 16 days' work} = 16 \times \frac{51}{2240} = \frac{51}{140}$$

$$\text{A's 11 days' work} = \frac{11}{140}$$

$$(\text{A} + \text{C})\text{'s 22 days' work} = 1 - \left(\frac{51}{140} + \frac{11}{140} \right) = \frac{39}{70}$$

$$\Rightarrow (\text{A} + \text{C})\text{'s 1 day's work} = \frac{39}{70} \div 22 = \frac{39}{1540}$$

$$\text{C's 1 day's work} = \frac{39}{1540} - \frac{1}{140} = \frac{39-11}{1540} = \frac{28}{1540} = \frac{1}{55}$$

C can finish the work in 55 days

Ans: (C) 55 days

12. A and B together can do a piece of work in 12 days. B and C together can do it in 21 days. If A is twice as good a workman as C, C alone can do it in

$$(A + B)\text{'s 1 day's work} = \frac{1}{12}, (B + C)\text{'s 1 day's work} = \frac{1}{21}$$

$$A\text{'s 1 day's work} = C\text{'s 2 days' work}$$

$$C\text{'s 2 days' work} + B\text{'s 1 day's work} = \frac{1}{12}$$

$$\Rightarrow C\text{'s 1 day's work} + (B + C)\text{'s 1 day's work} = \frac{1}{12}$$

$$\Rightarrow C\text{'s 1 day's work} + \frac{1}{21} = \frac{1}{12}$$

$$C\text{'s 1 day's work} = \frac{1}{12} - \frac{1}{21} = \frac{7-4}{84} = \frac{3}{84} = \frac{1}{28}$$

$\therefore$ C alone can finish it in 28 days

Ans: (D) 28 days

13. A and B working alone can finish a piece of work in 15 and 7 days respectively. If they work at it alternately for a day, B beginning, in how many days will the work be finished?

$$A\text{'s 1 day's work} = \frac{1}{15}, B\text{'s 1 day's work} = \frac{1}{7}$$

$$\text{Work done in the first 2 days} = \frac{1}{7} + \frac{1}{15} = \frac{15+7}{105} = \frac{22}{105}$$

$$\text{Work done in the first 8 days} = 4 \times \frac{22}{105} = \frac{88}{105}$$

$$\text{On day 9 it is B's turn: work done in the first 9 days} = \frac{88}{105} + \frac{1}{7} = \frac{103}{105}$$

$$\text{Remaining work} = 1 - \frac{103}{105} = \frac{2}{105}$$

$$A \text{ does it in } \frac{2}{105} \div \frac{1}{15} = \frac{2}{7} \text{ day}$$

$$\therefore \text{Total no. of days} = 9 + \frac{2}{7} = 9\frac{2}{7} \text{ days}$$

Ans: (B) $9\frac{2}{7}$ days

14. A certain number of men complete a piece of work in 48 days. If there were 5 men more, the work could be finished in 15 days less. How many men were there originally?

Let the original number of men be x

$$\text{No. of men} \propto \frac{1}{\text{No. of days}}$$

$$x \times 48 = (x + 5) \times 33$$

$$48x = 33x + 165$$

$$15x = 165 \Rightarrow x = 11$$

Ans: (C) 11

15. If 4 men or 10 boys can finish a piece of work in 19 days, in how many days can 12 men and 8 boys finish it?

$$4 \text{ men} = 10 \text{ boys}$$

$$12 \text{ men} = \frac{10}{4} \times 12 = 30 \text{ boys}$$

$$12 \text{ men} + 8 \text{ boys} = 30 \text{ boys} + 8 \text{ boys} = 38 \text{ boys}$$

$$\text{No. of boys} \propto \frac{1}{\text{No. of days}}$$

$$10 \times 19 = 38 \times x \Rightarrow x = 5 \text{ days}$$

Ans: (B) 5 days

16. 6 men and 3 women working 6 hours a day finish a piece of work in 10 days; 4 men and 3 women working 8 hours a day do the same work in 10 days. Find the number of days in which the work is done by 4 men only, working 4 hours a day.

Let 1 man do m and 1 woman do w units of work in 1 hour.

$$\text{Case (i): } (6m + 3w) \times 6 \times 10 = 360m + 180w$$

$$\text{Case (ii): } (4m + 3w) \times 8 \times 10 = 320m + 240w$$

$$\text{Same work: } 360m + 180w = 320m + 240w$$

$$\Rightarrow 60w = 40m \Rightarrow 3w = 2m$$

So 3 women = 2 men, and $6m + 3w = 8$ men

8 men working 6 hours a day for 10 days do the same work as 4 men working 4 hours a day for x days

$$8 \times 6 \times 10 = 4 \times 4 \times x \Rightarrow x = 30 \text{ days}$$

Ans: (D) 30 days

17. If 3 men with 5 boys can earn ₹8340 in 12 days and 6 men with 6 boys can earn ₹4440 in 4 days, in what time will 4 men with 2 boys earn ₹6600?

Let 1 man earn ₹ x and 1 boy earn ₹ y in 1 day.

$$(3x + 5y) \times 12 = 8340 \Rightarrow 3x + 5y = 695 \quad \dots (1)$$

$$(6x + 6y) \times 4 = 4440 \Rightarrow 6x + 6y = 1110 \quad \dots (2)$$

$$(1) \times 2 \Rightarrow 6x + 10y = 1390$$

$$(1) \times 2 - (2) \Rightarrow 4y = 280 \Rightarrow y = 70$$

$$\text{From (1): } 3x = 695 - 350 = 345 \Rightarrow x = 115$$

$$(4x + 2y)n = 6600$$

$$\Rightarrow (460 + 140)n = 6600 \Rightarrow 600n = 6600$$

$$\Rightarrow n = 11 \text{ days}$$

Ans: (C) 11 days

18. 48 men are employed to do a piece of work which they could finish in 15 days, but the men drop off by 8 at the end of every 8 days. In what time will the work be completed?

$$\text{Work done by 48 men in 8 days} = 8 \times \frac{1}{15} = \frac{8}{15}$$

$$\text{So 1 man's work in 8 days} = \frac{8}{15} \div 48 = \frac{1}{90}$$

$$\text{Remaining work} = \frac{7}{15}, \text{ remaining men} = 40; \text{ work done by 40 men in 8 days} = 40 \times \frac{1}{90} = \frac{4}{9}$$

$$\text{Remaining work} = \frac{1}{45}, \text{ remaining men} = 32; \text{ work done by 32 men in 8 days} = \frac{16}{45}$$

$$\frac{1}{45} \text{ work is done by 32 men in } \frac{1}{45} \div \frac{16}{45} \times 8 = \frac{1}{2} \text{ days}$$

$$\text{Total time} = 8 + 8 + \frac{1}{2} = 16\frac{1}{2} \text{ days}$$

Ans: (D) $16\frac{1}{2}$ days

19. A can do half as much again as B can do in the same time. A alone can do a piece of work in 28 days. In how many days can B alone finish it?

If B does x , A does $\frac{x}{2} + x = \frac{3x}{2}$ in the same time

Ratio of working of A and B = $\frac{3}{2} : 1 = 3 : 2$

Ratio of time taken for the same work = $2 : 3$

Time taken by A = $2k = 28 \Rightarrow k = 14$

Time taken by B = $3k = 42$ days

Ans: (A) 42 days

20. The speed of a boat in still water is 13.5 km/hr and the speed of the stream is 4 km/hr. The speed of the boat downstream is

Speed downstream = $(x + y)$ km/hr

= $13.5 + 4 = 17.5$ km/hr

Ans: (B) 17.5 km/hr

21. A man rows upstream 41 km and downstream 65 km, taking 5 hours each time. The velocity of the current is

Speed downstream: $x + y = \frac{65}{5}$ km/hr

Speed upstream: $x - y = \frac{41}{5}$ km/hr

Subtracting, $2y = \frac{65}{5} - \frac{41}{5} = \frac{24}{5}$

$y = \frac{24}{10} = 2.4$ km/hr

Ans: (A) 2.4 km/hr

22. A man can row 9 km/hr in still water and he finds that it takes him thrice as long to row up as to row down the river. The rate of the stream is

Let the rate of the stream be y km/hr

Same distance, thrice the time, so speed down = $3 \times$ speed up

Given $3(9 - y) = 9 + y$

$\Rightarrow 27 - 3y = 9 + y \Rightarrow 4y = 18$

$\Rightarrow y = 4.5$ km/hr

Ans: (C) 4.5 km/hr

23. A man can row 7.5 km/hr in still water. If the river is running at 3.5 km/hr, it takes him 1 hour 30 minutes to row to a place and back. The place is at a distance of

Let the required distance be d km

Speed downstream = $7.5 + 3.5 = 11$ km/hr

Speed upstream = $7.5 - 3.5 = 4$ km/hr

Total time = 1 hour 30 minutes = 1.5 hours

Time = $\frac{\text{Distance}}{\text{Speed}}$, so $\frac{d}{11} + \frac{d}{4} = 1.5$

$\Rightarrow d \left(\frac{1}{11} + \frac{1}{4} \right) = 1.5$

$\Rightarrow d \times \frac{15}{44} = 1.5$

$\Rightarrow d = 4.4$ km

Ans: (B) 4.4 km

24. The current of a stream runs at the rate of 3 km/hr. A motor boat goes 15 km upstream and back again to the starting point in 55 minutes. The speed of the motor boat in still water is

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

Speed upstream = $(x - 3)$ km/hr, speed downstream = $(x + 3)$ km/hr

Total time = 55 min = $\frac{55}{60}$ hr = $\frac{11}{12}$ hr

$$\frac{15}{x-3} + \frac{15}{x+3} = \frac{11}{12}$$

$$\Rightarrow 15 \left(\frac{(x+3)+(x-3)}{(x-3)(x+3)} \right) = \frac{11}{12}$$

$$\Rightarrow \frac{30x}{x^2-9} = \frac{11}{12}$$

$$\Rightarrow 360x = 11x^2 - 99$$

$$\Rightarrow 11x^2 - 360x - 99 = 0$$

$$\Rightarrow (x - 33)(11x + 3) = 0$$

$$\Rightarrow x = 33 \text{ (or) } x = -\frac{3}{11} \text{ (rejected, a speed cannot be negative)}$$

$\therefore$ Speed of the boat in still water = 33 km/hr

Ans: (A) 33 km/hr

25. A man can row 8 km upstream and 48 km downstream in 5 hours, while he can row 32 km upstream and 72 km downstream in 10 hours. The rate of the current is

Let the speed of the man in still water be x km/hr and the rate of the current y km/hr.

Speed upstream = $(x - y)$ km/hr, speed downstream = $(x + y)$ km/hr. Put $p = \frac{1}{x-y}$, $q = \frac{1}{x+y}$

$$\frac{8}{x-y} + \frac{48}{x+y} = 5 \Rightarrow 8p + 48q = 5 \quad \dots (1)$$

$$\frac{32}{x-y} + \frac{72}{x+y} = 10 \Rightarrow 32p + 72q = 10 \quad \dots (2)$$

$$(1) \times 4 \Rightarrow 32p + 192q = 20$$

$$(1) \times 4 - (2) \Rightarrow 120q = 10 \Rightarrow q = \frac{1}{12}$$

$$\text{From (1): } 8p + 4 = 5 \Rightarrow 8p = 1 \Rightarrow p = \frac{1}{8}$$

$$\text{So } x - y = 8 \text{ and } x + y = 12$$

$$\text{Adding, } 2x = 20 \Rightarrow x = 10; \text{ then } y = 12 - 10 = 2$$

Ans: (C) 2 km/hr