



# RBI • NABARD • SEBI

## QUANTITATIVE APTITUDE

# TIME DISTANCE



[www.courses.edutap.co.in](http://www.courses.edutap.co.in)



+91 8146207241



[hello@edutap.co.in](mailto:hello@edutap.co.in)



Download EduTap app

## Top 25 Questions Based on Time & Distance

**Q1. A train after travelling 50 km meets with an accident and then proceeds at three-fourth of its former speed and arrives at its destination 35 minutes late. Had the accident occurred 72 km further, it would have reached the destination only 15 minutes late. The normal speed of the train is?**

- A. 36 kmph
- B. 38 kmph
- C. 46 kmph
- D. 72 kmph
- E. None of these

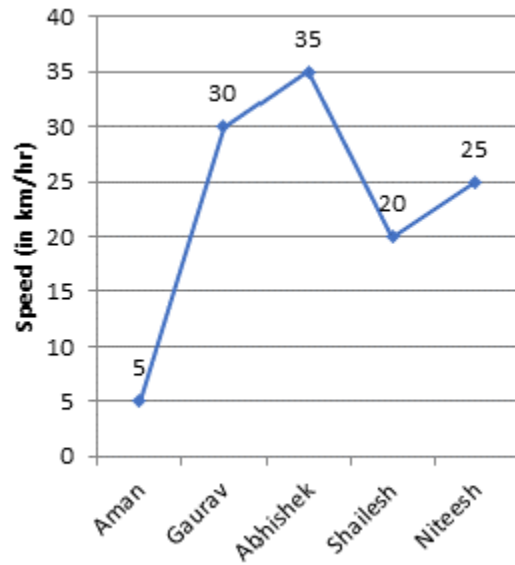
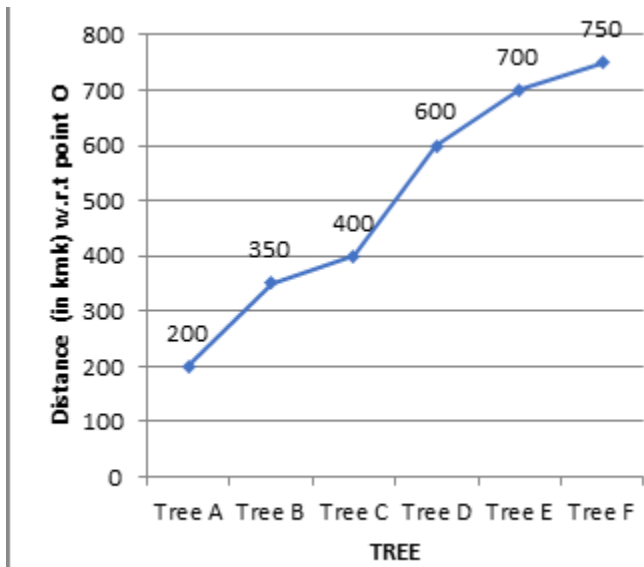
**Q2. Two trains measuring 100 m and 80 m respectively, run on parallel lines of track. When travelling in opposite directions they are observed to pass each other in 9 seconds, but when they are running in the same direction at the same rate as before, the faster train passed the other in 18 seconds. Find the speed of the two trains in km per hour.**

- A. 12 km/hr, 5 km/hr
- B. 14 km/hr, 18 km/hr
- C. 16 km/hr, 54 km/hr
- D. 18 km/hr, 54 km/hr
- E. None of these

**Directions (3-6): Read the following line graphs and answer the following questions-**

**Various trees are placed in a straight line in the jungle. Distance of each tree is given with respect to point O in the jungle and speed of different persons is also given: -**

EduTap



**Q3.** At 8: 00 A.M. Aman started running from tree E. At 11:00 A.M. a lion, who was at tree E saw Aman and chased him. Aman was running away from the lion and after 10 min. he increased his speed by 100%. At what time will the lion catch Aman? (Speed of lion is 20 km/hr.)

- A. 12: 30 pm
- B. 12: 25 pm
- C. 01: 00 pm
- D. 01: 25 pm
- E. None of these

**Q4.** Gaurav and Abhishek start at same time from tree B to tree D, after reaching tree D they turned to tree B. At approximately how much distance from tree B they meet 1st time?

- A. 235 km
- B. 225 km
- C. 230 km
- D. 215 km
- E. 150 km

**Q5.** Nitesh covers a distance from point O to tree E, if he stops 30 min after reaching every tree. Find the total time to cover the distance by Nitesh?

- A. 30hr.
- B. 28hr.
- C. 2hr.
- D. 32hr.

E. None of these

**Q6. If Gaurav is standing at tree D and Shailesh is standing at tree F. In how much time will they meet if they walk towards each other?**

A. 1 hr

B. 3.5hr.

C. 2.5 hr.

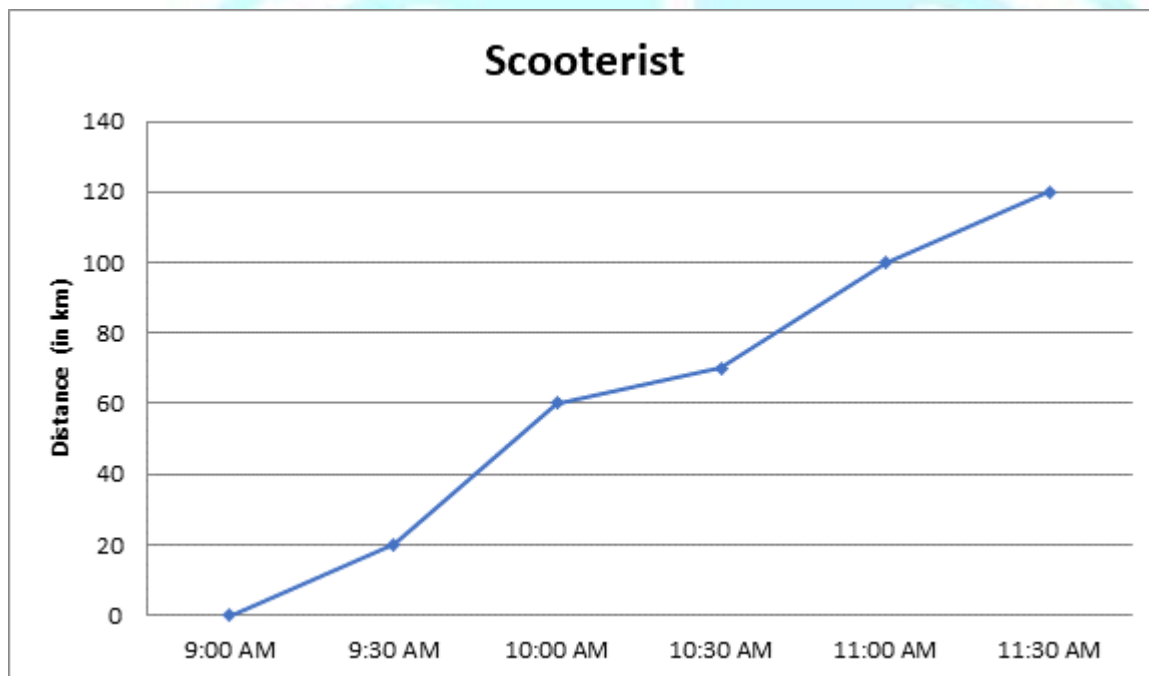
D. 2hr.

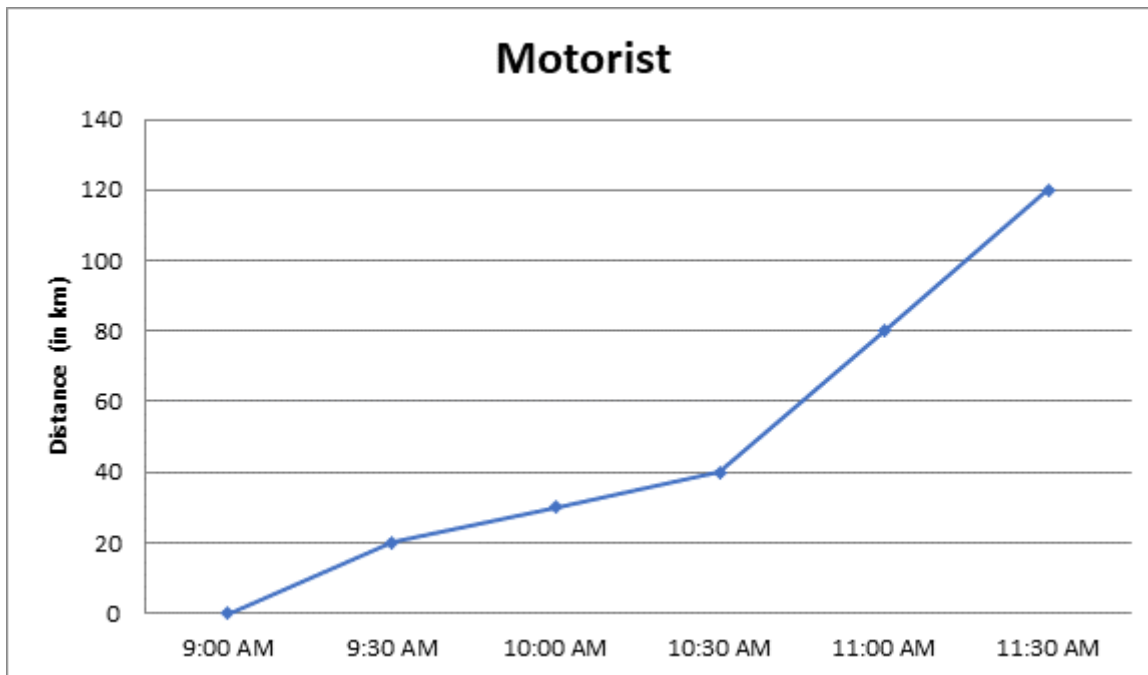
E. 3hr.

**Directions (7-10):** Read the following line graphs carefully and answer the following questions:

**A Scooterist and a motorist cover a distance of 120 km. They both start their journey at 9: 00 AM. In the first line graph the distance time-slots of 30 minutes is given for the scooterist and the same is given in second graph for the motorist.**

Note: Both scooterist and motorist run with a constant speed in the given intervals of 30 minutes.





**Q7. Average speed of the scooterist to cover first 110 km distance is what percent more/less than the average speed of the motorist to cover first 100 km distance?**

- A. 5%
- B. 10%
- C. 15%
- D. 20%
- E. None of these

**Q8. At 10: 30 am, a car starts chasing the scooterist with the speed of 140 km/hr. from the point where scooterist started his journey, then find the time at which the car will caught the scooterist?**

- A. 11: 18 am
- B. 11: 08 am
- C. 11: 15 am
- D. 11: 32 am
- E. Can't be determined

**Q9. If the speed of the scooterist and the motorist is increased by 10% and 20% respectively throughout the journey then find the difference in time taken by the scooterist and motorist to cover the given total distance?**

- A.  $11/23$  hr.
- B.  $7/22$  hr.
- C.  $4/11$  hr.
- D.  $25/132$  hr.
- E. None of these

**Q10. At what time they will be 30 km apart from each other if they choose the same road to cover 120 km of distance?**

- A. 10: 20 am

- B. 11: 15 am
- C. 11: 09 am
- D. 10: 00 am
- E. None of these

**Directions (11-15):** In this table, number of leaps taken by the different animal in one minute and ratio of distance covered by the animal in one leap to the distance covered by Lion in one leap are give

Animals	No. of leaps in one minute	Ratio of distance covered by the animal in one leap to the distance covered by Lion in one leap
Cat	5	2: 5
Monkey	6	3: 4
Dog	7	4: 7
Jackal	4	5: 8
Rabbit	6	1: 5

**Q11.** Dog sees a stationary cat and estimates that it will catch the cat in 1 min and starts moving towards it. At the same time cat also starts moves away from the dog. In how much time the dog will catch the cat?

- A. 1 min.
- B. 2 min.
- C. 4 min.
- D. 1.5 min
- E. None of these

**Q12.** Jackal sees a Rabbit and finds that it is 2 minutes away from him. Jackal starts to run towards Rabbit and at the same time rabbit also starts to run away from Jackal. In which minute Jackal will catch the Rabbit?

- A. Jackal could not catch the rat
- B. In 5th min
- C. In 4th min.
- D. In 6th min.
- E. None

**Q13.** What is the ratio of the speed of Dog to Cheetah, if Cheetah covers 50% of more distance in one leap than lion and sum of leaps taken by Cat and Monkey in one minute is equal to the number of leaps taken by Cheetah in one minute?

- A. 2: 5
- B. 5: 8
- C. 11: 13
- D. 8: 33
- E. None

**Q14.** When a Cat climb up a tree its speed is reduced by 20% and when Monkey climb up a tree its speed is increased by 20%. Cat's speed on climbing up a tree is what percent of speed of Monkey when it climbs the tree. (Approximately)

- A. 30%
- B. 40%
- C. 50%
- D. 10%
- E. 15%

**Q15.** What is the sum of distance cover by all the 5 animals in 2 minutes if distance cover by Jackal in 1 minute is 10 meters?

- A. 80m
- B. 70.8m
- C. 68.3m
- D. 16m
- E. None

**Directions (16-20):** To answer the following questions, which of the information given in the Statements (A), (B), (C) and (D) or (1), (2), (3) and (4) below is/are necessary/ sufficient?

**Q16).** At what time will a train reach Lucknow from Patna?

- A.** The train crosses another train of equal length of 200 m and running in opposite direction in 9 sec.
- B.** The train leaves Patna at 11:15 am for Lucknow, which is at a distance of 567 km.
- C.** The 97.50-m-long train crosses a signal pole in 5 sec.

- A. Only A
- B. B and C together
- C. A and C together
- D. All statements are required
- E. Only B

**Q17.** A train crosses another train in 10 sec. Find out the lengths of the trains.

- A.** Ratio between the lengths the of second and first train is 4: 5.
- B.** Ratio between the speed of first and second trains is 1: 2.
- C.** The speed of first train is 36 km/hr

- A. Only A and B together

- B. Only B and C together
- C. Only A and C together
- D. Questions can't be answered even after using all the information
- E. None of these

**Q18. What is the distance between city P and city Q?**

**I. Two persons A and B started simultaneously from P to Q, with their speeds in the ratio 4: 5.**

**II. B reached P one hour earlier than A reached Q.**

**III. The difference between speeds of A and B is 20 kmph**

- A. I and III only
- B. II and III only
- C. I and II only
- D. All I, II and III together
- E. Data inadequate

**Q19. What is the distance between P and Q?**

**I. Car A reaches point Q from point P in 2 hours.**

**II. Car B covers the distance between P and Q with a uniform speed of 20km/h.**

**III. The ratio of speeds of car A and car B is 4:5.**

- A. Statement I and II together are sufficient.
- B. Statement II and III together are sufficient.
- C. All the statements together are sufficient.
- D. All the statements together are not sufficient.
- E. All the statements are sufficient individually.

**Q20. Who is the fastest among Karun, Rohit and Parthiv?**

**I. The ratio of their speeds is 3:4:2 respectively.**

**II. Karun takes one hour less than Rohit to travel the same distance.**

**III. Parthiv take 2 hours less than Rohit to travel the same distance.**



- A. Statement 1 and 2 together are sufficient.
- B. Statement 1 or statements 2 and 3 together are sufficient.
- C. All the statements together are sufficient.
- D. All the statements together are not sufficient.
- E. All the statements are sufficient individually.

**Q21. What are the speeds of two trains?**

- A. Two trains of lengths 100 m and 80 m respectively run on parallel tracks.**
- B. When running in the same direction the faster train passes the slower one in 18 seconds.**
- C. When running in opposite directions, they pass each other in 9 seconds.**

- A. A and C together
- B. A and B together
- C. A, B and C together
- D. B and C together
- E. Question can't be answered even after using all the information

**Q22. A Boat takes 128 min less to travel to 48 Km downstream than to travel the same distance upstream. If the speed of the stream is 3 Km/hr. Then Speed of Boat in still water is?**

- A. 6 kmph
- B. 9 kmph
- C. 12 kmph
- D. 15 kmph
- E. None of these

**Q23. A Ship of Length 300m traveling from point A to B downstream passes a Ghat along the river in 18 sec, while in return it passes the same Ghat in 24 sec. If the rate of current is 9 Km/hr. Then what is the length of the Ghat?**

- A. 50m
- B. 60m
- C. 80m
- D. 100m

E. None of these

**Q24. A boat takes 28 hours for travelling downstream from point A to point B and coming back to point C midway between A and B. If the velocity of the stream is 6km/hr and the speed of the boat in still water is 9 km/hr, what is the distance between A and B?**

A. 115km

B. 120km

C. 140km

D. 165km

E. 150km

**Q25. A boat takes 25 hours for travelling downstream from point A to point B and coming back to point C midway between A and B. If the velocity of the stream is 5 km/hr and the speed of the boat in still water is 10 km/hr, what is the distance between A and B?**

A. 100km

B. 122km

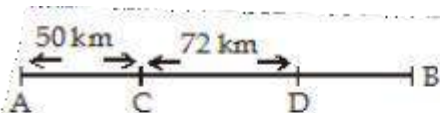
C. 146km

D. 178km

E. 150km

### Solution With Answer Key:

1). D



(i) When accident takes place at C then the distance covered after the accident = CB

(ii) When accident taken place at D then distance covered after the accident = DB

$$CB - DB = 72 \text{ km}$$

$$CD = 72 \text{ km}$$

$$\text{Time taken to cover CD} = 3 \times 45 - 3 \times 15$$

$$= 105 - 45 = 60 \text{ min}$$

$$\text{Therefore speed of train} = \frac{72}{60} \times 60 = 72 \text{ km / h}$$

**2). D**

Let speed of two trains are  $S_1$  and  $S_2$

$$\therefore S_1 + S_2 = \frac{100+80}{9} = \frac{180}{9} = 20 \quad \dots (i)$$

$$S_1 - S_2 = \frac{100-80}{18} = \frac{20}{18} = 10 \quad \dots (ii)$$

On solving (i) and (ii)

$$\therefore 2S_1 = 30$$

$$S_1 = 15 \text{ m/sec} = 15 \times \frac{18}{5} = 54 \text{ km/hr}$$

$$\therefore S_2 = 5 \text{ m/sec} = 5 \times \frac{18}{5} = 18 \text{ km/hr}$$

**3). B**

Distance covered by Aman in three hours =  $3 \times 5 = 15$  km

In 10 min. relative distance =  $(20 - 5) \times \frac{10}{60}$

$$= 15 \times \frac{10}{60}$$

$$= \frac{10}{4} = 2.5 \text{ km}$$

Remaining distance =  $15 - 2.5$

= 12.5 km

$$\text{Now, } \frac{12.5}{t} = (20 - 10)$$

$$\frac{12.5}{t} = 10$$

$$t = \frac{12.5}{10} = 1.25 \text{ hrs} = 1 \text{ hr } 15 \text{ min.}$$

$\therefore$  Required time =  $11:00 + 0:10 + 1:15 = 12: 25 \text{ pm.}$

**4). C**

Ratio of their speed = 35 : 30

= 7 : 6

If Abhishek covers 250 km then at the same time Gaurav covers =  $\frac{250}{7} \times 6 = \frac{1500}{7}$

After Abhishek reach **at** tree D,

Distance between them =  $250 - \frac{1500}{7}$

$$= \frac{250}{7}$$

To cover  $\frac{250}{7}$  km, time required to meet them =  $\frac{250}{7 \times (35+30)}$

$$= \frac{250}{455} = \frac{50}{91}$$

Required distance =  $\left(250 - \frac{35 \times 50}{91}\right)$

$$= \frac{22750 - 1750}{91}$$

≈ 230 km

5). A

To reach at tree E, time taken by Nitesh =  $\frac{700}{25} = 28$  hr

Stopping time = 4 × 30 min

= 120 min

= 2 hr

Total time = 28 + 2 = 30 hrs

6). E

Required time =  $\frac{750 - 600}{(30+20)}$

$$= \frac{150}{50}$$

= 3 hrs.

7). B

$$\text{Avg. speed of scooterist} = \frac{110}{2 + \frac{1}{4}}$$

$$= \frac{110 \times 4}{9}$$

$$= \frac{440}{9} \text{ km/hr}$$

$$\text{Avg. speed of motorist} = \frac{100}{2 + \frac{1}{4}}$$

$$= \frac{400}{9}$$

$$\text{Required \%} = \frac{\frac{440}{9} - \frac{400}{9}}{\frac{400}{9}} \times 100$$

$$= \frac{40}{400} \times 100$$

$$= 10\%$$

8). A

At 10 : 30 distance covered by scooterist = 70 km

At 11 : 00 am distance covered by scooterist = 100 km

At 11 : 00 am distance covered by car =  $\frac{140}{2} = 70$  km

Relative speed =  $140 - 40 = 100$  km/hr

$$\text{Required time} = \frac{(100 - 70)}{100}$$

$$= \frac{30}{100} = \frac{3}{10} \text{ hr}$$

= 18 min

∴ At 11 : 18 am the car will caught the scooterist

9). D

$$\text{Time taken by scooterist to cover the total distance with increased speed} = \frac{120}{\frac{11}{10} \times 48} = \frac{1200}{11 \times 48}$$

$$\text{Time taken by motorist to cover the total distance with increased speed} = \frac{120}{\frac{13}{10} \times 48} = \frac{1200}{12 \times 48}$$

$$\text{Difference in time} = \frac{1200}{48} \left( \frac{1}{11} - \frac{1}{12} \right) = \frac{1200}{48 \times 132} = \frac{25}{132} \text{ hr.}$$

10). E

There will be more than one possibility to be 30 km apart.

### 11). B

Ratio of distance covered by cat, lion and dog in one leap will be

$$\begin{array}{r} \text{Cat : Lion : Dog} \\ 2 : 5 \\ 7 : 4 \\ \hline 14 : 35 : 30 \end{array}$$

Let they cover  $14x$ ,  $35x$  and  $20x$  distance in one leap

So, in one min dog covers =  $20x \times 7 = 140x$  distance

This distance is equal to distance between dog and cat

In one min cat covers =  $14x \times 5 = 70x$  distance

$$\text{Required time} = \frac{\text{Distance between cat and dog}}{\text{Relative speed between dog and cat}} = \frac{140x}{140x - 70x} = 2 \text{ min.}$$

#### Another method

According to dog, cat was 1 minute away from him.

Now, cat complete 5 leaps in 1 minute

$$\text{distance} \begin{cases} 5 \text{ leaps of cat} = 2 \text{ leaps of lion} \\ 10 \text{ leaps of cat} = 4 \text{ leaps of lion} \end{cases}$$

$\Rightarrow$  this takes 2 minute of cat.

Now, dog's 7 leap = 4 leaps of lion

7 leaps of dog = 10 leaps of cat

And, dog take 1 minute to cover 4 leaps of lion but in the same time cat moves away 2 leaps of lion. In 1 more min

Dog cover 4 leaps of lion and again cat moves away 2 leaps of lion. So finally dog will catch cat in 2 mins

Total time to catch the cat =  $1 + 1$  minute = 2 minute.

### 12). C

According to Jackal

Jackal is 2 min away from Rat.

Distance  $\Rightarrow$  2 min  $\rightarrow$  8 leaps of Jackal  $\rightarrow$  5 leaps of lion

In 2 min  $\rightarrow$  4 leaps of Jackal  $\Rightarrow \frac{5}{2} = 2.5$  leaps of lion

In 1 min  $\rightarrow$  6 leaps of Rat  $\Rightarrow \frac{1}{5} \times 6$  leaps of lion

$\rightarrow \frac{6}{5}$  leaps of lion

= 1.2 leaps

Resultant velocity =  $2.5 - 1.2 = 1.3$  leaps of lion.

$\rightarrow$  time =  $\frac{5}{1.3} = 3.84$  min

In 4th min.

### 13). D

Speed of dog

Dog  $\Rightarrow$  7 leap in 1 min.

7 leap distance of dog = 4 leap of lion.

Speed = Distance of 4 leap of lion/min

Cheetah.

No. of leaps in 1 min. = (no. of leaps of cat + no. of leap of monkey) in 1 min

=  $(5 + 6) \rightarrow 11$  leap in 1 min

Distance

2 leaps of Cheetah = 3 leaps of lion.

1 leaps of cheetah =  $\frac{3}{2}$  leaps of lion

In 11 leap of cheetah =  $\frac{33}{2}$  leaps of lion

Ratio

**Speed of Dog : Speed of cheetah**

$$= 4 : \frac{33}{2}$$

$$= 8 : 33$$

### 14). A

Cat →

Cat takes 5 leaps – 1 minute

5 leaps of cat = 2 leaps of lion

Cat's speed = Distance covered in 2 leaps of Lion/min

Reduced speed when climbing

$$= 2 \text{ leaps of lion/m} \times \frac{80}{100}$$

$$= \frac{8}{5} \text{ leaps of lion/m}$$

Monkey →

Monkey take = 6 leaps – 1 min.

4 leaps of monkey = 3 leaps of lion

6 leaps of monkey = 4.5 leaps of lion

Speed → distance cover in 4.5 leaps of lion/min

Increased speed when climbing →

$$= \frac{4.5 \times 20}{500} \text{ leaps of lion/m}$$

= 5.4 leaps of lion/m

$$\text{Required \%} = \frac{8 \times 100}{5 \times 5.4} \% = 29.629\% \approx 30\%$$

### 15). B

Jackal – 1 minute distance = 10 meter

Jackal 8 leaps = 10 meter

Lions 5 leaps = 10 meter

1 leap of lion = 2 meter

Jackal 2 min distance =  $10 \times 2 = 20$  meter

Cat's 2 min distance =  $(5 \times 2) = (3 \times 2)$  of Lion's leap

=  $6 \times 2 = 12$  meter

Monkey 2 min distance =  $6 \times 2 = 12$  leaps

= leaps of lion = 18 meter

Dog's 2 min distance = 14 leaps = 8 leaps of lion = 16 meter.

Rabbit 2 min distance = 12 leaps = 2.4 leaps of lion = 4.8 meter

Sum =  $(20 + 12 + 18 + 16 + 4.8)$  m = 70.8 m

### 16). B



St. A = relative speed of train =  $\frac{400}{9}$  m/s or 160 m/s

St. B = Distance = 567 km

St. C = Speed of train =  $\frac{97.5}{5} = 19.5$  m/s

The speed of the other train is not known so only B and C are the required Statements

**17). D**

St A — Lengths =  $4x, 5x$

St B — speed of second train = 72 km/hr

St C — speed of 1st train = 36 km/hr

As we don't know the directions of their motion so relative speed can't be determined

**18). D**

From I, the ratio of time taken by A and B is 5 : 4

From II,  $5x - 4x = 1$

Or,  $x = 1$

From II,  $5y - 4y = 20$

$\Rightarrow y = 20$

Distance =  $5y \times 4x = 100 \times 4 = 400$  km

**19). C**

Using all three statements

Speed of car A =  $4 \times \frac{20}{5} = 16$  km/hr

Distance between P and Q =  $16 \times 2 = 32$  km

**20). B**

1 → ratio of speed is 3 : 4 : 2

Ratio of time taken is 4 : 3 : 6

2 → Varun takes x hr and Rohit takes R hr.

Then,  $K + 1 = R$

3 → If Parthiv takes P hrs,

$P + 2 = R$

**21). C**

$$B) \frac{100+80}{v_f - v_s} = 18$$

$$v_f - v_s = 10$$

$$C) \frac{100+80}{v_f + v_s} = 9$$

$$v_f + v_s = 20$$

From B & C

$$v_f = 15 \text{ m/sec}$$

$$v_s = 5 \text{ m/s.}$$

**22). C**

Let speed of still water be s km/hr,

Speed of downstream = s+3

Speed of upstream = s-3

$$128/60 = 48/(s-3) - 48/(s+3)$$

$$128/60 = 48(1/(s-3) - 1/(s+3))$$

$$128/(60 \cdot 48) = s+3-(s-3)/[(s-3)(s+3)]$$

$$4/90 = s+3-s+3/[s^2+3s-3s-9]$$

$$(4/90) \cdot (1/6) = 1/[s^2-9]$$

$$S^2 - 9 = 135$$

$$S^2 = 144$$

$$S = 12 \text{ km/hr}$$

**23). B**

Let the speed of still water be S km/hr,

$$(S+9) \cdot 18 = (S-9) \cdot 24$$

$$S = 63$$

Speed of downstream = 63 + 9 = 72 km/hr

Speed of upstream = 63 - 9 = 54 km/hr

$$(300+x)/(72 \cdot 5/18) = 18$$

$$x = 60 \text{ m (or)}$$

$$(300+x)/(54 \cdot 5/18) = 24$$

$$X = 60 \text{ m}$$

**24). B**

Downstream speed =  $9+6 = 15$

Upstream speed =  $9-6 = 3$

Now total time is 28 hours

If distance between A and B is d, then distance BC =  $d/2$

Now distance/speed = time, so

$$d/15 + (d/2)/3 = 28$$

Solve,  $d = 120$  km

**25). E**

Downstream speed =  $10+5 = 15$

Upstream speed =  $10-5 = 5$

Now total time is 25 hours

If distance between A and B is d, then distance BC =  $d/2$

Now distance/speed = time, so

$$d/15 + (d/2)/5 = 25$$

Solve,  $d = 150$  km

EduTap