TIME & DISTANCE BASED QUANTITATIVE APTITUDE PRACTICE QUESTIONS AND ANSWERS PDF WITH EXPLANATION

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Q1. The time taken by a man to walk five times around the boundary of a square field having 16 hectares as area, at the rate of 5 km per hour is

a) 48 minutes

b) 16 minutes

c) 24 minutes

d) 96 minutes

e) None of these

Q2. A train 270 metre long is running at a speed of 36 km per hour, then it will cross a bridge of length 180 metres in :

a) 50 sec

b) 40 sec

c) 45 sec

d) 35 sec

Q3. Points A and B are 70 km apart on a highway. One car starts form A and the another one from B at the same time. If they travel in the same direction, they meet in 7 hours. But if they travel towards each other, they

meet in one hour. The speeds of the two cars are, respectively.

a) 40 and 30 km/h

b) 45 and 25 km/h

c) 70 and 10 km/h

d) 60 and 40 km/h

Q4. Excluding stoppages, the speed of a train is 45 km/h and including stoppages, it is 36 km/h. For how many minutes does the train stop per hour ?

a) 15 min.

b) 10 min.

c) 12 min.

d) 18 min.

Q5. A man can row 4.5 km/hr in still water and he finds that it takes him twice as long to row up as to row down the river. Find the rate of the stream.

a) 2.5 km/hr

b) 1.5 km/hr

c) 2 km/hr

d) 1.75 km/hr

Q6. It takes 8 hours for a 600 km journey, if 120 km is done by train and the rest by car. It takes 20 minutes more if 200 km is down by train and the rest by car. The ratio of the speed of the train to that of the car is

a) 3 : 4

b) 2 : 3

c) 3 : 2

d) 4 : 3

Q7. A man goes 15 metres due west and then 8 metres due north. How far is he from the starting point?

a) 17 metres

b) 19 metres

c) 16 metres

d) 15 metres

Q8. An aeroplane travels distances 2500 km, 1200km and 500km at the rate of 500 km/hr, 400 km/hr, and 250 km/hr, respectively. The average speed is

a) 410 km/hr

b) 420 km/hr

c) 405 km/hr

d) 575 km/hr

Q9. A person can swim at a speed of 9 km per hour in still water. If the speed of the stream is 6 km per hour, then how long does he take to swim up to a distance of 9 km and return at the starting point?

a) $3\frac{3}{5}$ hours

b) 2 hours

c) $2\frac{1}{2}$ hours

d) $3\frac{3}{4}$ hours

Q10. A circular running path is 726 metres in circumference. Two men start from the same point and walk in opposite directions at 3.75 km/h and 4.5 km/h, respectively. When will they meet for the first time ?

a) After 5.28 min

b) After 5.5 min

c) After 6.0 min

d) After 4.9 min

Q11. It takes eight hours for a 600 km journey, if 120 km is done by tain and the rest by car. It takes 20 minutes more, if 200 km is done by train and the rest by car. The ratio of the speed of the train to that of the car is

a) 3 : 4

b) 2 : 3

c) 3 : 2

d) 4 : 3

Q12. The metro service has a train going from Mumbai to Pune and Pune to Mumbai every hour, the first one at 6 a.m. The trip from one city to other takes $4\frac{1}{2}$ hours, and all trains travel at the same speed. How many trains will you pass while going from Mumbai to Pune if you start at 12 noon?

a) 9

b) 8

c) 10

d) 13

Q13. On a journey across Kolkata, a taxi averages 40 kmph for 60% of distance, 30 kmph for 20% of the distance, and 10 kmph for the remainder. The average speed of the whole journey is

a) 24 kmph

b) 25 kmph

c) 26 kmph

d) 30 kmph

Q14. A, B, and C are three participants in a kilometer race. If A can give B a start of 40 metres and B can give C a start of 25 metres, how many metres of a start can A give to C?

a) 62 m

b) 60 m

c) 64 m

d) 66 m

Q15. The area of a square park is 25 sq. km. The time taken to complete a round of the field once, at a speed of 3 km/hour is

a) 6 hours 40 minutes

b) 4 hours 60 minutes

c) 4 hours 50 minutes

d) 5 hours 40 minutes

Answers to the above questions :

Q1. Answer: (d)

Perimeter = 4 × $\sqrt{160000}$ = 1600 m

Time = $\frac{\text{Distance}}{\text{Speed}} = \frac{1600 \times 5 \times 60}{5000}$ = 96 min

None of these

Q2. Answer: (c)

Speed of train = 36 kmph

= $\left(36 \times \frac{5}{18}\right)$ m /sec = 10 m/sec.

Required time = $\frac{\text{length of train + Bridge}}{\text{Speed of train}}$

= $\frac{270 + 180}{10}$ = 45 seconds

Q3. Answer: (a)

Let the speed of the cars be x km/h and y km/h, respectively.

Their relative speeds when they are moving in same direction = (x – y) km/h.

Their relative speeds when they are in opposite directions = (x + y) km/h.

Now, $\frac{70}{x+y} = 1$ or x + y = 70 ...(1)

and $\frac{70}{(x-y)} = 7$ or x – y = 10 ...(2)

Solving (1) and (2), we have

x = 40 km/h and y = 30 km/h.

Q4. Answer: (c)

Due to stoppges the train travels

(45 – 36) = 9 km less in an hour than it could have travelled without stoppages.

Thus train stops per hour for $\frac{9}{45} \times 60 = 12$ min.

Q5. Answer: (b)

If the rate of the stream is x, then 2(4.5 – x) = 4.5 + x

⇒ 9 – 2x = 4.5 + x

⇒ 3x = 4.5 ⇒ x = 1.5 km/hr

Q6. Answer: (a)

Let T be the speed of train and C be the speed of car.

$\frac{120}{T} + \frac{480}{C} = 8 \Rightarrow \frac{1}{T} + \frac{4}{C} = \frac{1}{15}$ ...(1)

$\frac{200}{T} + \frac{400}{C} - 8 + \frac{20}{60} \Rightarrow \frac{1}{T} + \frac{2}{C} = \frac{1}{24}$ ...(2)

Subtracting (2) from (1)

$\frac{2}{C}(2-1) = \frac{1}{15} - \frac{1}{24}$

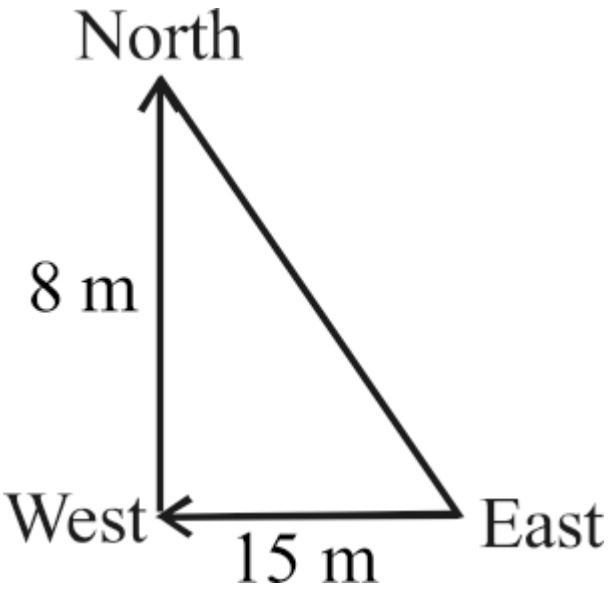
$\frac{2}{C} = \frac{1}{40}$ ⇒ C = 80

$\frac{1}{T} = \frac{1}{15} - \frac{4}{80}$

$\frac{1}{T} = \frac{1}{60}$ ⇒ T = 60

Required ratio = 60 : 80 = 3 : 4

Q7. Answer: (a)



Required distance

$= \sqrt{8^2 + 15^2}$

$= \sqrt{64 + 225}$

$= \sqrt{289}$ = 17 m

Q8. Answer: (b)

Given, distances are 2500 km, 1200 km and 500 km.

Given, speeds are 500 km/h, 400 km/h and 250 km/h

$\therefore$ Total time = $\frac{2500}{500} + \frac{1200}{400} + \frac{500}{250}$

= 5 + 3 + 2 = 10 hr.

$\therefore$ Average speed = $\frac{\text{Total distance}}{\text{Total time}}$

$= \frac{2500 + 1200 + 500}{10} = \frac{4200}{10}$

= 420 km/hr

Q9. Answer: (a)

Total time taken

$= \left(\frac{9}{9+6} + \frac{9}{9-6}\right)$ hour

$= \left(\frac{3}{5} + 3\right)$ hours = $3\frac{3}{5}$ hours

Q10. Answer: (a)

Their relative speeds = (4.5 + 3.75) = 8.25 km/h

Distance = 726 metres = $\frac{726}{1000}$ = 0.726km

Required time = $\frac{0.726}{8.25} \times 60$ = 5.28 min

Q11. Answer: (a)

Let the speed of the train be x km/hr and that of the car be y km/hr.

Then, $\frac{120}{x} + \frac{480}{y} = 8$ or $\frac{1}{x} + \frac{4}{y} = \frac{1}{15}$ ...(1)

And, $\frac{200}{x} + \frac{400}{y} = \frac{25}{3}$ or $\frac{1}{x} + \frac{2}{y} = \frac{1}{24}$ ...(2)

Solving (1) and (2), we get

x = 60 and y = 80.

∴ Ratio of speeds = 60 : 80 = 3 : 4.

Q12. Answer: (a)

If you start at 12 noon, you would reach at 4 : 30 PM. You would be able to meet the train which left Mumbai at 8 AM, 9 AM, 10 AM, 11 AM, 12 Noon, 1 PM, 2 PM, 3 PM and 4 PM – a total of 9 trains.

Q13. Answer: (a)

Let total distance be d.

time taken for 60% distance = $\frac{0.6d}{40} = \frac{3d}{200}$ h

time taken for 20% distance = $\frac{0.2d}{30} = \frac{d}{150}$ h

time taken for remaining 20% distance = $\frac{0.2d}{10} = \frac{d}{50}$ h

average speed = $\frac{d}{\frac{3d}{200} + \frac{d}{150} + \frac{d}{50}}$

= $\frac{200 \times 150 \times 50}{22500 + 10000 + 30000} = \frac{200 \times 150 \times 50}{62500}$

= 24 kmph

Q14. Answer: (c)

When A covers 1000 m, B covers 960 m.

Similarly, when B covers 1000 m, C covers 975 m.

∴ When B covers 960 m, C covers $\frac{975}{1000} \times 960$ = 936 m.

Thus, A can give a start to C by a distance

= (1000 – 936) m = 64 m.

Q15. Answer: (a)

Side of square park = $\sqrt{25}$ km = 5 km

Perimeter of park = 4 × 5 = 20 km

Time taken = $\frac{20km}{3\frac{km}{h}}$ = 6 hours 40 minutes