

Quantitative Aptitude Time and Distance Problems with Solutions Pdf

1. A bus covers a distance of 2924 km in 43 hours. What is the speed of the bus?
- 60 km/hr
 - 68 km/hr
 - 72 km/hr
 - Cannot be determined

Ans: B

$$\text{Speed} = \left(\frac{2924}{43} \right) \text{km/hr} = 68 \text{ km/hr.}$$

2. A is travelling at 72 km per hour on a highway while B is travelling at a speed of 25 metres per second. What is the difference in their speeds in metres per second?

- 1(1/2) m/sec
- 2 m/sec
- 3 m/sec
- 5 m/sec

Ans: D

$$A\text{'s speed} = 72 \text{ km/hr} = \left(72 \times \frac{5}{18} \right) \text{m/sec} = 20 \text{ m/sec.}$$

$$B\text{'s speed} = 25 \text{ m/sec.}$$

$$\text{Difference} = (25 - 20) \text{ m/sec} = 5 \text{ m/sec.}$$

3. Car A travels at the speed of 65 km/hr and reaches its destination in 8 hours. Car B travels at the speed of 70 km/hr and reaches its 4 hours. What is the ratio of the distance covered by car A and Car B respectively?

- 7 : 11
- 13 : 7
- 7 : 13
- 11 : 7

Ans: B

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$$\text{Required ratio} = (65 \times 8) : (70 \times 4) = 520 : 280 = 13 : 7.$$

4. A train leaves Delhi at 4.10 P.M. and reaches Aligarh at 7.25 P.M. The average speed of the train is 40 km/hr. What is the distance from Delhi to Aligarh?

- a. 120 km
- b. 130 km
- c. 135 km
- d. 140 km

Ans: B

$$\text{Time taken} = 3 \text{ hrs } 15 \text{ min} = 3 \frac{1}{4} \text{ hrs} = \frac{13}{4} \text{ hrs.}$$

$$\therefore \text{Required distance} = \left(40 \times \frac{13}{4}\right) \text{ km} = 130 \text{ km.}$$

5. Deepa rides her bike at an average speed of 30 km/hr and reaches her destination in 6 hours. Hema covers the same distance in 4 hours. If Deepa increases her average speed by 10 km/hr and Hema increases her average speed by 5 km/hr, what would be the difference in their time taken to reach the destination?

- a. 40 minutes
- b. 45 minutes
- c. 54 minutes
- d. 1 hour

Ans: C

$$\text{Deepa's original speed} = 30 \text{ km/hr.}$$

$$\text{Deepa's new speed} = (30 + 10) \text{ km/hr} = 40 \text{ km/hr.}$$

$$\text{Distance} = (30 \times 6) \text{ km} = 180 \text{ km.}$$

$$\text{Hema's original speed} = \left(\frac{180}{4}\right) \text{ km/hr} = 45 \text{ km/hr.}$$

$$\begin{aligned} \text{Hema's new speed} \\ &= (45 + 5) \text{ km/hr} = 50 \text{ km/hr.} \end{aligned}$$

Difference in time

$$= \left(\frac{180}{40} - \frac{180}{50}\right) \text{ hrs} = \frac{9}{10} \text{ hrs} = \left(\frac{9}{10} \times 60\right) \text{ min} = 54 \text{ min.}$$

6. An aeroplane flies twice as fast as a train which covers 60 miles in 80 minutes. What distance will the aeroplane cover in 20 minutes?

- a. 30 miles
- b. 35 miles
- c. 40 miles
- d. 50 miles

Ans: A

$$\text{Time taken to cover 60 miles} = 80 \text{ min} = \frac{4}{3} \text{ hrs.}$$

$$\therefore \text{Speed of the train} = \left(60 \times \frac{3}{4}\right) \text{ mph} = 45 \text{ mph.}$$

$$\text{Speed of the aeroplane} = (2 \times 45) \text{ mph} = 90 \text{ mph.}$$

$$\text{Distance covered by the aeroplane in 60 min} = 90 \text{ miles.}$$

$$\text{Distance covered by the aeroplane in 20 min}$$

$$= \left(\frac{90}{60} \times 20\right) \text{ miles} = 30 \text{ miles.}$$

7. A truck covers a distance of 550 metres in 1 minute whereas a bus covers a distance of 33 kms in 45 minutes. The ratio of their speeds is

- a. 3 : 4
- b. 4 : 3
- c. 3 : 5
- d. 50 : 3

Ans: A

$$\text{Ratio of speeds} = \left(\frac{550}{60} \times \frac{18}{5}\right) : \left(\frac{33}{45} \times 60\right) = 33 : 44 = 3 : 4.$$

8. An express train travelled at an average speed of 100 km/hr, stopping for 3 minutes after every 75 km. How long did it take to reach its destination 600 km from the starting point?

- a. 6 hrs 21 min
- b. 6 hrs 24 min
- c. 6 hrs 27 min
- d. 6 hrs 30 min

Ans: A

$$\text{Time taken to cover 600 km} = \left(\frac{600}{100}\right) \text{ hrs} = 6 \text{ hrs.}$$

$$\text{Number of stoppages} = \frac{600}{75} - 1 = 7.$$

$$\text{Total time of stoppage} = (3 \times 7) \text{ min} = 21 \text{ min.}$$

Hence, total time taken = 6 hrs 21 min.

9. A long distance runner runs 9 laps of a 400 metres track everyday. His timings for four consecutive days are 88, 96, 89 and 87 respectively. On an average, how many metres/minute does the runner cover?

- a. 17.78
- b. 40
- c. 90
- d. None of these

Ans: B

$$\begin{aligned} \text{Average speed} &= \frac{\text{Total distance covered}}{\text{Total time taken}} \\ &= \left(\frac{4 \times 9 \times 400}{88 + 96 + 89 + 87}\right) \text{ m/min} = \left(\frac{14400}{360}\right) \text{ m/min} \\ &= 40 \text{ m/min.} \end{aligned}$$

10. A train covers a distance of 10 km in 12 minutes. If its speed is decreased by 5 km/hr, the time taken by it to cover the same distance will be

- a. 10 min
- b. 11 min 20 sec
- c. 13 min
- d. 13 min 20 sec

Ans: D

$$\text{Speed} = \left(10 \times \frac{60}{12}\right) \text{ km/hr} = 50 \text{ km/hr.}$$

$$\text{New speed} = (50 - 5) \text{ km/hr} = 45 \text{ km/hr.}$$

$$\begin{aligned} \therefore \text{Time taken} &= \left(\frac{10}{45}\right) \text{ hr} = \left(\frac{2}{9} \times 60\right) \text{ min} = 13\frac{1}{3} \text{ min} \\ &= 13 \text{ min } 20 \text{ sec.} \end{aligned}$$

11. A train scheduled to cover the distance between two stations 46 km apart in one hour. if it travels 25 km at a speed of 40 km/hr, find the speed for the remaining journey to complete it in the scheduled time.

- a. 36 km/hr
- b. 46 km/hr
- c. 56 km/hr
- d. 66 km/hr

Ans: C

$$\text{Time taken to travel 25 km} = \left(\frac{25}{40}\right) \text{ hr} = \frac{5}{8} \text{ hr.}$$

$$\text{Remaining time} = \left(1 - \frac{5}{8}\right) \text{ hr} = \frac{3}{8} \text{ hr.}$$

$$\therefore \text{Required speed} = \left(21 \times \frac{8}{3}\right) \text{ km/hr} = 56 \text{ km/hr.}$$

12. A man on tour travels 160 km by car at 64 km/hr and another 160 km by bus at 80 km/hr. The average speed for the whole journey is

- a. 35.55 km/hr
- b. 36 km/hr
- c. 71.11 km/hr
- d. 71 km/hr

Ans: C

$$\text{Total time taken} = \left(\frac{160}{64} + \frac{160}{80}\right) \text{ hrs} = \frac{9}{2} \text{ hrs.}$$

$$\therefore \text{Average speed} = \left(320 \times \frac{2}{9}\right) \text{ km/hr} = 71.11 \text{ km/hr.}$$

13. A boy rides his bicycle 10 km at an average speed of 12 km/hr and again travels 12 km at an average speed of 10 km/hr. His average speed for the entire trip is approximately.

- a. 10.4 km/hr
- b. 10.8 km/hr
- c. 11 km/hr
- d. 12.2 km/hr

Ans: B

Total distance travelled = $(10 + 12)$ km/hr = 22 km/hr.

Total time taken = $\left(\frac{10}{12} + \frac{12}{10}\right)$ hrs = $\frac{61}{30}$ hrs.

\therefore Average speed = $\left(22 \times \frac{30}{61}\right)$ km/hr = 10.8 km/hr.

14. An athlete claimed that his timing for a 100 m dash should be corrected because the starting signal was given by a gun fired from a point 10 m away from him and the timekeeper was standing close to the gun. The error due to this could be (in seconds).

- a. 0.03
- b. 0.1
- c. 0.5
- d. 0.7

Ans: A

Error = Time taken to cover 10 m at 300 m/sec

= $\left(\frac{10}{300}\right)$ sec = $\frac{1}{30}$ sec \approx 0.03 sec.

15. A flight of Jet Airways from Delhi to Mumbai has an average speed of 700 km/hr without any stoppage, whereas a flight of Kingfisher from Delhi to Mumbai has an average speed of 560 km/hr with stoppage at Baroda. What is the average stoppage time per hour of Kingfisher flight if both the planes fly at the same speed?

- a. 8 min

b. 12 min

c. 16 min

d. 24 min ->

Ans:

Due to stoppage, Kingfisher flight covers $(700 - 560)$
= 140 km less per hour.

Time taken to cover 140 km = $\left(\frac{140}{700} \times 60\right)$ min = 12 min.

Hence, stoppage time per hour = 12 min.

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