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Time and Distance Questions for CDS, CLAT & SSC Exams.

Time and distance Quiz 4

Directions: Study the following Questions carefully and choose the right answer:

1. A thief is spotted by a policeman from a distance of 100 m. When the policeman starts the chase, the thief also starts running. If the speed of the thief be 8 km/hr and that of the policeman 10 km/hr. How far the thief will have run before he is overtaken?

- A. 100 m B. 150 m C. 200 m D. 400 m

2. I walk a certain distance and ride back taking a total time of 37 minutes. I could walk both ways in 55 minutes. How long would it take me to ride both ways?

- A. 5 min. B. 10 min. C. 13 min. D. 19 min.

3. A motor-cycle covers 40 km with a speed of 20 km/hr. find the speed of the motor-cycle for the next 40 km journey so that the average speed of the whole journey will be 30 km/hr.

- A. 70 km/hr B. 52.5 km/hr C. 60 km/hr D. 60.5 km/hr

4. A man rides at the rate of 18 km/hr, but stops for 6 minutes to change horses at the end of every 7th km. The time that he will take to cover a distance of 90 km is

- A. 6 hrs B. 6 hrs. 12 min. C. 6 hrs. 18 min. D. 6 hrs. 24 min.

5. Walking at 3 km/hr . Pintu reaches his school 5 minutes late. If he walks at 4 km per hour he will be 5 minutes early. The distance of Pintu's from his house is

- A. $1\frac{1}{2}$ km B. 2 km C. $2\frac{1}{2}$ km D. 5 km

6. Two persons A and B start simultaneously from two places c km apart, and walk in the same direction. If A travels at the rate of p km/hr and B travels at the rate of q km/hr, then A has travelled before he overtakes B a distance of

- A. $\frac{qc}{p+q}$ km B. $\frac{qc}{q-p}$ km C. $\frac{c}{p-q}$ km D. $\frac{pc}{p-q}$ km

7. With a uniform speed, a car covers a distance in 8 hours. Had the speed been increased by 4 km/hr, the same distance could have been covered in 7 hours and 30 minutes. What is the distance covered?

- A. 420 km B. 480 km C. 520 km D. 640 km

8. A train runs at an average speed of 75 km/hr. If the distance to be covered is 1050 km, how long will the train take to cover it

A. 13 hrs

B. 15 hrs

C. 14 hrs

D. 12 hrs

9. A father and his son start at a point A with speeds of 12 km/h and 18 km/h respectively and reach another point B. If his son starts 60 min after his father at A and reaches B, 60 min before his father, what is the distance between A and B?

A. 90 km

B. 72 km

C. 36 km

D. None of these

10. Two men P and Q start from a place walking at 5 km/h and 6.5 km/h, respectively. What is the time they will take to be 92 km apart, if they walk in opposite directions?

A. 2 h

B. 4 h

C. 6 h

D. 8 h



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Correct Answers:

1	2	3	4	5	6	7	8	9	10
A	C	C	A	B	D	B	C	B	D

Explanations:

1. Given,

Distance between Agra and Delhi = 300 km

Relative speed = $38 + 37 = 75$ km/hr

Time taken to cross each other = $\frac{\text{Distance}}{\text{Speed}}$

$$= \frac{300}{75} = 4 \text{ hours.}$$

Hence, option A is correct.

2. Distance covered per hour = Relative speed \times Time

$$= (3 + 2) \times 1 = 5 \text{ km [opposite direction]}$$

$$\therefore \text{Distance covered in 2 hours} = 5 \times 2 = 10 \text{ km.}$$

Hence, option C is correct.

3.

New Speed = $\frac{2}{3}$ of the usual speed

$$\therefore \text{New time taken} = \frac{3}{2} \text{ of the usual time}$$

$$\text{So, } \left(\frac{3}{2} \text{ of the usual time}\right) - (\text{usual time}) = 20 \text{ min}$$

$$\Rightarrow \frac{1}{2} \text{ of the usual time} = 20 \text{ min}$$

$$\Rightarrow \text{usual time} = 40 \text{ mins.}$$

Hence, option C is correct.

4. Let the total distance covered = LCM of (10, 20, 60) = 60.

As per the question,

Distance covered by the car with each speed

$$= \frac{1}{3} \times 60 = 20 \text{ km}$$

$$\Rightarrow \frac{20}{10} + \frac{20}{20} + \frac{20}{60} = \frac{60}{\text{avg. speed}}$$

$$\Rightarrow \frac{10}{3} = \frac{60}{\text{avg. speed}}$$

\Rightarrow Average speed = 18 km/hr

Hence, option A is correct.

5. To solve this question we can apply a short trick approach

$$\text{Reqd. distance} = \frac{\text{Product of both speeds}}{\text{Difference of speeds}} \times (a + b)$$

Where,

'a' is the extra of time taken by first speed = 6 mins

'b' is the less of time taken by second speed = 10 mins

$$a + b = 10 + 6 = 16 \text{ mins} = \frac{4}{15} \text{ hour}$$

By the short trick approach, we get

$$\text{Reqd. distance} = \frac{\frac{5}{2} \times 3}{3 - \frac{5}{2}} \times \frac{4}{15}$$

$$= \frac{15/2}{1/2} \times \frac{4}{15} = 4 \text{ km}$$

Hence, option B is correct.

6. Time taken by A to overtake B

$$= \frac{\text{Distance}}{\text{Relative speed}} = \frac{c}{p - q}$$

\therefore Distance covered by A before he overtakes B = Speed \times Time

$$\Rightarrow p \times \frac{c}{p - q} = \frac{pc}{p - q} \text{ km}$$

Hence, option D is correct.

7. Let the distance be x km. Then,

$$\frac{x}{15/2} - \frac{x}{8} = 4$$

$$\Rightarrow \frac{16x - 15x}{120} = 4 \Rightarrow x = 480 \text{ km.}$$

Hence, option B is correct.

8. Given,

Speed = 75 km/hr, Distance to be covered = 1050 km. Then,

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Time} = \frac{1050}{75} = 14 \text{ hrs}$$

Hence, option C is correct.

9. Let the distance be x and the difference in time taken by the father and the son = 60 + 60 = 120 mins = 2 hrs. (The son reaches 2 hours faster than the father.)

Time taken by the father - Time taken by the son = 2 hours

$$\frac{x}{12} - \frac{x}{18} = 2$$

$$\Rightarrow \frac{3x - 2x}{36} = 2 \Rightarrow x = 72 \text{ km}$$

Hence, option B is correct.

10. Given,

Distance = 92 km, Relative Speed = 5 + 6.5 = 11.5 km/h

$$\therefore \text{Reqd. Time} = \frac{\text{Distance}}{\text{Relative speed}} = \frac{92}{11.5} = 8 \text{ h}$$

Hence, option D is correct.



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