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## Time and Distance Questions for IBPS Clerk Pre, SBI Clerk Pre and IBPS RRB Exams.

### Time and distance Quiz 8

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

1. A man can reach a certain place in 40 hours. If he reduces his speed by  $\frac{1}{15}$ th, he goes 5 km less in that time. Find the total distance covered by him.

- A. 60 km.                      B. 85 km.                      C. 75 km.                      D. 52 km.                      E. None of these

2. A person travelled 132 km by auto, 852 km by train and 248 km by bike. It took 21 hours in all. If the speed of train is 6 times the speed of auto and 1.5 times speed of bike, what is the speed of train?

- A.  $78 \text{ kmh}^{-1}$                       B.  $104 \text{ kmh}^{-1}$                       C.  $96 \text{ kmh}^{-1}$                       D.  $88 \text{ kmh}^{-1}$                       E. None of these

3. A car drove from Agra to Delhi without stopping. It covered the first 50 miles of its journey at an average speed of 25 mph. What was the car's average speed (in mph), for the remaining 130 miles if its overall average speed was 45 mph?

- A. 28                      B. 40                      C. 50                      D. 65                      E. None of these

4. A motor car does a journey in 16 hours, covering the first half at 30 Km/hr and the second half at 50 Km/hr. What is the distance covered?

- A. 480 km                      B. 540 km                      C. 500 km                      D. 400 km                      E. None of these

5. A and B are two stations 1200 km apart. Train X starts from station A towards station B at 60 kmph 2 hours before train Y starts from station B towards station A. If they meet at a point 360 km from station B, What is the speed of Train Y?

- A. 45 kmph                      B. 90 kmph                      C. 60 kmph                      D. 30 kmph                      E. None of these

6. A car travels 70 km/h for one and half hours. Then it travels for 3 hours at 50 km/h. After that it covers 105 km in one and half hours. What is the average speed of the car for the whole journey?

- A. 50 km/h                      B. 45 km/h                      C. 40 km/h                      D. 60 km/h                      E. None of these

7. A car travels the first one-third of a certain distance with a speed of 20 km/hr, the next one-third distance with a speed of 30 km/hr and the last one-third distance with a speed of 60 km/hr. The average speed of the car for the whole journey is

- A. 20                      B. 40                      C. 30                      D. 25                      E. None of these

8. Sumit covers a distance in 30 minutes if he drives at a speed of 50 km/h on an average. Find the speed at which he must drive at to increase the time of the journey by 25%?

- A. 50 km/h              B. 35 km/h              C. 40 km/h              D. 20 km/h              E. None of these

9. If a person divides a distance into 3 equal parts and travels the three parts with speeds of 50, 40 and 30 km/hr respectively, what is his average speed (in km/hr) for the whole journey?

- A. 37.5                      B. 60                      C. 38.3                      D. 40                      E. None of these

10. Ram and Shyam start at the same time from the same place towards their school. If the speed of Shyam is 83.33% of Ram's speed then he reaches the school 1 hour 15 minutes after Ram. Find the time taken by Ram to reach the school?

- A. 6 hours 15 minutes              B. 6 hours 45 minutes              C. 7 hours 30 minutes  
D. 5 hours 15 minutes              E. None of these

**Correct Answers:**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
C	C	D	E	D	D	C	C	C	A

## Explanations:

1. Let Distance = D km, Speed = S km/h

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

$$40 = \frac{\text{Distance}}{\text{Speed}} \dots (1)$$

After reducing speed,

$$\text{Distance} = \text{Distance} - 5 \text{ km, Speed} = S \times \frac{14}{15} \text{ km/h}$$

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

$$40 = \frac{(\text{Distance} - 5)}{\text{Speed} \times \frac{14}{15}} \dots (2)$$

After solving equation 1 and 2

$$\frac{\text{Distance}}{\text{Speed}} = \frac{(\text{Distance} - 5)}{\text{Speed} \times \frac{14}{15}}$$

$$14 \text{ Distance} = 15 (\text{Distance} - 5)$$

$$14 \text{ Distance} = 15 \text{ Distance} - 75$$

$$\text{Distance} = 75 \text{ km.}$$

Hence, option C is correct.

2. Let the speed of auto be  $x \text{ kmh}^{-1}$ . So, the speed of train will be  $6x$  and that of bike will be

$$= \frac{6x}{1.5} = 4x$$

As per the given information,

Time taken by auto + Time taken by train + Time taken by bike = 21 hours

$$\Rightarrow \frac{132}{x} + \frac{852}{6x} + \frac{248}{4x} = 21$$

$$\text{or, } \frac{132}{x} + \frac{142}{x} + \frac{62}{x} = 21$$

$$\text{or, } 21x = 132 + 142 + 62 = 336$$

$$\therefore x = \frac{336}{21} = 16$$

$$\therefore \text{Speed of the train} = 6x = 6 \times 16 = 96 \text{ kmh}^{-1}$$

Hence, option C is correct.

3.

$$\text{Average speed} = \frac{\text{total distance}}{\text{total time}}$$

$$\text{Total distance} = 50 + 130 = 180 \text{ miles}$$

$$\therefore \text{Total time} = \frac{180}{45} = 4 \text{ hours.}$$

$$\text{Time spent for the first 50 miles} = \frac{50}{25} = 2 \text{ hours}$$

$$\therefore \text{Time spent on the remaining journey} = 4 - 2 = 2 \text{ hours}$$

$$\therefore \text{Average speed for the remaining 130 miles} = \frac{130}{2} = 65 \text{ mph}$$

Hence, option D is correct.

4. Since different speeds are travelled for equal distance, the average speed can be found out

$$\text{Average speed} = \frac{(2 \times 30 \times 50)}{(30 + 50)} = \frac{300}{8} \text{ km/h}$$

$$\text{Distance covered} = \frac{300}{8} \times 16 = 600 \text{ km}$$

Hence, option E is correct.

5. The distance covered by X in 2 hours is  $2 \times 60 = 120 \text{ km}$

The distance remaining is 1080 km

This distance travelled before meeting is directly proportional to their speed

They meet 360 km from B. Hence, train Y must've travelled 360 km

X has travelled 720 km and Y has travelled only 360 km in the same time

This means that speed of X is twice of Y

Since speed of X is 60 kmph therefore speed of Y is 30 kmph

Hence, option D is correct.

**6.**

The distance travelled at 70 km/h is  $70 \times 1\frac{1}{2} = 105$  km

The distance travelled at 50 km/h is  $50 \times 3 = 150$  km

The total distance travelled is  $105 + 150 + 105 = 360$  km

and time taken is  $1\frac{1}{2} + 1\frac{1}{2} + 3 = 6$  hours

$\therefore$  Average speed of car for whole journey =  $\frac{360}{6} = 60$  km/h

Hence, option D is correct.

**7.** Let the total distance covered = LCM of (20, 30, 60) = 60.

As per the question,

Distance covered by the car with each speed =  $\frac{1}{3} \times 60 = 20$  km

$$\Rightarrow \frac{20}{20} + \frac{20}{30} + \frac{20}{60} = \frac{60}{\text{avg. speed}}$$

$$\Rightarrow \frac{6}{3} = \frac{60}{\text{avg. speed}} \Rightarrow \text{average speed} = 30 \text{ km/hr.}$$

Hence, option C is correct.

**8.**  $D = S \times T$

$$D = \frac{50 \times 30}{60}$$

$D = 25$  km Now new time =  $30 \times 125\% = 37.5$  minutes  $D = S \times T$

$$25 = \frac{S \times 37.5}{60}$$

$S = 40$  km/h

Hence option C is correct.

9. Let the total distance be  $3x$  kms.

∴ The distance travelled in each part is  $x$  kms.

∴ The time taken to cover the three parts is  $\frac{x}{50}$ ,  $\frac{x}{40}$  and  $\frac{x}{30}$  respectively.

Now, average speed is total distance covered divided by the total time taken, so we get,

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

$$\text{Average speed} = \frac{3x}{\left(\frac{x}{50} + \frac{x}{40} + \frac{x}{30}\right)}$$

$$= \frac{3}{\left(\frac{1}{50} + \frac{1}{40} + \frac{1}{30}\right)}$$

$$= \frac{3}{\left(\frac{12 + 15 + 20}{600}\right)}$$

$$= \frac{1800}{47} \approx 38.3 \text{ km/hr}$$

Hence, option C is correct.

10. Shyam's speed = 83.33% of Ram's speed =  $\frac{5}{6}$  of Ram's speed

Ram's speed: Shyam's speed = 6 : 5

We know that speed is inversely proportion to time.

So, the respective time taken by Ram and Shyam = 5 : 6

Let Ram takes  $5x$  hours and Shyam takes  $6x$  hours then difference will become  $6x - 5x = x = 1$  hour 15 minutes

So, the time taken by Ram to reach the school =  $5x = 5 \times (1 \text{ hour } 15 \text{ minutes}) = 6 \text{ hours } 15 \text{ minutes}$

Hence, option A is correct.



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