T.S.D

CASE 1)WHEN THE DISTANCE TRAVELLED IS CONSTANT.

Q1) If the speed of a person is increased by 20%, he reaches his destination 15 minutes early. What is the initial time taken by the person?

Q2)Samir drove at the speed of 45 kmph from home to a resort. Returning over the same route, he got stuck in traffic and took an hour longer, also he could drive only at the speed of 40 kmph. How many kilometers did he drive each way?

A. 250 kms. B. 300 kms. C. 310 kms. D. 360 kms. E. None of these

Q3) If a man goes at a speed of 20kmph from his home, he reaches his office 15 mins late. If he goes at a speed of 25 kmph, he reaches 10 min early. What is the distance between his home and office?

Q4)A man moves from A to B at the rate of 8 km/hr. Had he moved at the rate of 5 km/hr, he would have taken 36min more to reach the destination. What is the distance between A and B(in km)?

Q5)A thief flees City A in a car towards City B on a stretch of straight road, 300 kilometers long, at the speed of 60 km/hr. In 15 minutes a police party (X) leaves city A to chase the thief at 65 km/hr.

4. After leaving how long (in hours) does it take for the police Party X to catch the thief?

A. 3 B. 5 C. 2 D. 5

Q6)If a police party (Y) were to leave City B at the same time as police party X leaving City A to catch the thief at 60km/hr, after the police caught the thief they bring him to the city B at 60kmph, then which of the following statements is true?

A. Party X reaches 37.5 minutes after Party Y has caught the thief.

B. Party Y reaches 37.5 minutes after Party X has caught the thief

C. Party X and Party Y has caught the thief together.

D. Party X was 20 km away when the thief caught

CASE 2)
WHEN THE TIME TAKEN IS THE SAME (USUALLY MEETING TIME CASES)
THEN THE RATIO OF DISTANCE AND SPEED BECOMES THE SAME.

Q7)If A and B left at same time to meet at a certain point at a speed of 30km/hr and 20km/hr in opposite directions/same direction .The distance travelled is 500m.Find their meeting point and the time taken ?

CASE 3)
WHEN THE SPEED IS CONSTANT
THEN DISTANCE AND TIME ARE DIRECTLY PROPORTIONAL.
MORE DISTANCE MEANS MORE TIME WILL BE TAKEN.

RELATIVE SPEED :
RATE AT WHICH THE DISTANCE BETWEEN TWO BODIES CHANGES.

1) When the bodies move in the same direction ,the speeds subtract.

2) When the bodies move in the opposite direction ,the speeds add.

TRAINS

When a train passes a point object ,the distance travelled is equal to the length of the train.
When a train passes another train or it passes a platform the distance travelled is equal to the length of train and platform.

Q8.) X and Y are two stations 600 km apart. A train starts from X and moves towards Y at the rate of 25 km/h. Another train starts at the same time from Y at the rate of 35 km/h. How far from X and after how many hours they will cross each other?

Q9.)A and B are 12.5 km apart, if they start simultaneously and travel in same direction, they meet after 2.5 hrs and if they travel in opposite directions towards each other they meet after 30 minutes. If B travels faster than A , then B speed is?

Q10) The distance between two stations A and B is 240 km. Ravi starts from A at 6:00 am and reaches B at a 2:00 pm. Teja starts from B at 8:00 am and reaches A at 1:20 pm. At what distance from the stations A do they cross each other?

Q11) Two trains for Mumbai leave Delhi at 6:00 am and 6:45 am and travel at 100 kmph and 136 kmph respectively. How many kilometers from Delhi will the two trains be together?

Q12)The length of the bridge, which a train 130 m long and travelling at 45 km/hr can cross in 30 seconds, is ?

Q13) Q2)Rajdhani Express travels 650 km in 5 h and another 940 km in 10 h. what is the average speed of train?

Q14)Two trains are moving in opposite directions @60km/hr and 90km/hr. Their lengths are 1.10 km and 0.9 km respectively. The time taken by the slower train to cross the faster train in seconds is:

Q15)A and B started at a time towards each other. After crossing each other, they took 16hrs, 25hrs respectively to reach their destinations. If A had 40 kmph speed, what is the speed of B in kmph?
A.48 B.42 C.32 D.None of these

Q16)It takes 24 seconds for a train travelling at 93 kmph to cross entirely another train half its length travelling in opposite direction at 51 kmph. It passes a bridge in 66 seconds. What is the length of the bridge? (in m)
A. 1065 B. 1600 C. 1705 D. 1580 E. None of these

Q17)A man can row 10.2 km downstream in 18 minutes. If the speed of the stream
is 3.5 km/h, how much time he would take to cover 121.5 km upstream? (approx in hours)

A. 9/2 B. 3 C. 4 D. 11/2 E. 7/2

Q18)A boat can travel 4.2 km upstream in 14 min. If the respective ratio of speed of the boat in still water and speed of the steam is 7:1. How much time will the boat take to cover 17.6 km downstream?

A. 52 min B. 44 min C. 48 min D. 36 min E. 54 min

THANKYOU