 Techofworld.In

1- A man is standing on a railway bridge which is 180 m long. He finds that a train crosses the bridge in 20 seconds but himself in 8 seconds. Find the speed of the train?

- **A.**36 kmph
- **B.**54 kmph
- **C.**67 kmph
- **D.**76 kmph
- **E.**None of these

Answer & Explanation

Answer - **B** (54 kmph)

Explanation - Let the length of the train be x metres.

Then, the train covers x metres in 8 seconds and (x + 180) metres in 20 seconds.

$\therefore$ x/8 =(x + 180) / 20 ⇔ 20x = 8(x + 180) ⇔ x = 120.

$\therefore$ Length of the train = 120 m.

Speed of the train = [120/8]m/sec =[15 x 18/5]kmph = 54 kmph.

2- Two trains are running at 40 km/hr and 20 km/hr respectively in the same direction. Fast train completely passes a man sitting in the slower train in 5 seconds. What is the length of the fast train?

- **A.**27 7/9 m
- **B.**28 m
- **C.**29 m
- **D.**30 2/7 m
- **E.**None of these

Answer & Explanation

Answer - **A** (27 7/9 m)

Explanation - Relative speed = (40-20) km/hr = [20 x 5/18] m/sec = [50/9] m/sec.

Length of faster train = [50/9 x 5] m = 250/9 m = 27 7/9 m.

3- Two train travel in opposite directions at 36 kmph and 45 kmph and a man sitting in slower train passes the faster train in 8 seconds. Then length of the faster train is:

- **A.**120 m
- **B.**140 m
- **C.**160 m
- **D.**180 m
- **E.**None of these

Answer & Explanation

Answer - **D** (180 m)

Explanation - Relative speed = (36 + 45) km/hr

= [81 x 5/18] m/sec = [45/2] m/sec.

Length of train = [45/2 x 8] m = 180 m.

4- Two trains of equal lengths take 10 seconds and 15 seconds respectively to cross a telegraph post. If the length of each train be 120 metres, in what time (in seconds) will they cross each other travelling in opposite direction?

- **A.**12 sec
- **B.**14 sec
- **C.**16 sec
- **D.**20 sec
- **E.**None of these

Answer & Explanation

Answer - **A** (12 sec)

Explanation - Speed of the first train = [120 / 10] m/sec = 12 m/sec.

Speed of the second train = [120 / 15] m/sec = 8 m/sec.

Relative speed = (12 + 8) = m/sec = 20 m/sec.

∴ Required time = (120 + 120) / 20 secc = 12 sec

5- Two trains are running in opposite directions with the same speed. If the length of each train is 120 metres and they cross each other in 12 seconds, then the speed of each train (in km/hr) is:

- **A.**12 kmph
- **B.**24 kmph
- **C.**36 kmph
- **D.**48 kmph
- **E.**None of these

Answer & Explanation

Answer - **C** (36 kmph)

Explanation - Let the speed of each train be x m/sec.

Then, relative speed of the two trains = 2x m/sec.

So, 2x = (120 + 120)/12 ⇔ 2x = 20 ⇔ x = 10.

∴ Speed of each train = 10 m/sec = [10 x 18/5] km/hr = 36 km/hr

6- Excluding stoppages, the speed of a bus is 54 kmph and including stoppages, it is 45 kmph. For how many minutes does the bus stop per hour?

- **A.**10 min
- **B.**11 min
- **C.**12 min
- **D.**13 min
- **E.**None of these

Answer & Explanation

Answer - **A** (10 min)

Explanation - Due to stoppages, it covers 9 km less. Time taken to cover 9 km = (9/54 x 60) min = 10 min

7- A motor car starts with the speed of 70 km/hr with its speed increasing every two hours by 10 kmph. In how many hours will it cover 345 kms?

- **A.**2 1/4 hrs
- **B.**4 hrs 5 mins
- **C.**4 1/2 hrs
- **D.**Can not be determined
- **E.**None of these

Answer & Explanation

Answer - **C** (4 1/2 hrs)

Explanation - Distance covered in first 2 hours = (70 x 2) km = 140 km

Distance covered in next 2 hours = (80 x 2) km = 160 km

Remaining distance = 345 – (140 + 160) = 45 km.

Speed in the fifth hour = 90 km/hr

Time taken to cover 45 km = $\frac{45}{90}$ hr = $\frac{1}{2}$ hr

Total time taken = $2 + 2 + \frac{1}{2} = 4\frac{1}{2}$ hrs

8- A person travels from P to Q at a speed of 40 kmph and returns by increasing his speed by 50%. What is his average speed for the both the trips?

- **A.**36 kmph
- **B.**45 kmph
- **C.**48 kmph
- **D.**50 kmph
- **E.**None of these

Answer & Explanation

Answer - **C** (48 kmph)

Explanation - Speed on return trip = 150% of 40 = 60 kmph

Average speed = $\frac{2 \times 40 \times 60}{40 + 60}$ km/hr $= \frac{4800}{100}$ km/hr = 48 km/hr.

9- Bombay Express Left Delhi from Bombay at 14.30 hrs, travelling at a speed of 60 kmph and Rajdhani Express left. Delhi for Bombay on the same day at 16.30 hrs, travelling at a speed of 80 kmph. How far away from Delhi will the two trains meet?

- **A.**120 km
- **B.**360 km
- **C.**480 km
- **D.**540 km

- **E.**None of these

Answer & Explanation
Answer - **C** (480 km)
Explanation - Suppose they meet x hours after 14.30 hrs

Then, 60x = 80 (x – 2) or x = 8

Required distance = (60 x 8) km = 480 km

10- A man in a train notices that he can count 21 telephone posts in one minute. If they are known to be 50 meters apart, then at what speed is the train travelling?

- **A.**55 kmph
- **B.**57 kmph
- **C.**60 kmph
- **D.**63 kmph
- **E.**None of these

Answer & Explanation
Answer - **C** (60 kmph)
Explanation - Number of gaps between 21 telephone posts = 20 Distance traveled in 1 minute = (50 x 20) m = 1000 m = 1 km Speed = 60 km/hr