PROBLEMS ON TRAINS

Direction: Read the following questions carefully and choose the right answer.

1. Ajay walked 12 km to reach the station from his house. Then he boarded in a train and reached his destination. The average speed of the entire journey was 62 kmph and he took a total time of 6 hours. If the average speed of train was 120 kmph, then what is the ratio of walking speed of Ajay to the speed of train?

A. 1 : 30 B. 1 : 60 C. 2 : 35 D. 2 : 65 E. None of these

2. In a train, there are three coaches numbered 1 to 3. In the 1st coach the chairs are numbered 101 to 130, in the 2nd coach the chairs are numbered 201 to 220 and in the 3rd coach the chairs are numbered 301 to 330. The chair occupancy was 50% in 1st coach, 80% in the 2nd coach and 40% in the 3rd coach. The chairs charges are Rs.200, Rs.150 and Rs.300 in each of the coach respectively. Then find the average income per chair in the train?

A. Rs. 112.5 B. Rs. 217.4 C. Rs. 128.5 D. Rs. 231.4 E. None of these

- 3. Shatabdi Express has a capacity of 600 seats out of which 15% is in the Special VIP class, rest being VIP class seats. During its journey the train was booked to 80% of its full capacity. If Special VIP class was booked to 70% of its capacity, how many VIP class seats were empty during that journey?
 A. 95
 B. 88
 C. 93
 D. 82
 E. 75
- 4. Train 'A' of length 300m cross another train 'B' of length 200m which is approaching towards 'A' with speed 56km/hr. Train 'A' crosses a car travelling in the same direction as that of the train A and speed of car is 45km/hr. Find the ratio of the time taken by Train 'A' to cross the car to the time taken by Train 'A' to cross Train 'B' if the speed of Train 'A' is 66 km/hr.
 A. 121 : 35
 B. 35 : 123
 C. 122 : 35
 D. 125 : 33
 E. 127 : 45
- 5. A toy train moves at a fixed speed on a plane surface. It starts from the top of an inclined plane and reaches the bottom in 3 hrs and again moves upwards for 3 hrs but falls 'Y' km short of the starting point. In the whole 6 hours the toy train travels a total of 12 km. Due to inclination of the plane train gains 1km/h speed in decline and loses same speed in incline. Find the extra time required by the toy train to climb up the remaining 'Y' km and reach the starting point.

 A. 04 hrs
 B. 10 hrs
 C. 06 hrs
 D. 8.5 hrs
 E. None of these

6. At 3 PM, train A was 65 km behind train B and running with speed twice of train B. There was another train C which was 265 km apart from train A running opposite to both trains with speed of 40 km/hr. Train A decided to overtake train B and increased its speed by 5 km/hr and overtook train B in one hour. At what time would train B and train C meet each other?

A. 5 : 45 PM B. 5 : 30 PM C. 5 : 00 PM D. 6 : 00 PM E. 4 : 30 PM

7. A 180 meters long passenger train crosses a 360 meters long express train running in the opposite direction in 12 seconds. If the ratio of the speed of the passenger train to that of express train is 1 : 4 then find the speed of the express train?

8. The numerical value of the speed of the train is three more than twice of the time taken by the train to cover 495 km. What is the respective ratio of the numerical value of the time taken by train to cover 825 km and the speed of the train?

A. 7 : 5 B. 2 : 3 C. 25 : 33 D. 9 : 7 E. 6 : 5

9. Train A completely crosses train B which is 300 m long in 15 seconds. If they are travelling in the same direction and the difference of speed of both the trains is 30m/s, then find the difference between the lengths of trains.

A. 170 m B. 150 m C. 195 m D. 50 m E. 40 m

10. Two trains running at 54 kmph and 48 kmph cross each other in 12 seconds when they run in opposite directions. When they run in the same direction, a person in the faster train observes that he crossed the other train in 32 seconds. What is the time taken by train having speed 48 kmph to cross a platform of double of its length?

A. 14.50 seconds B. 20.54 seconds C. 17 seconds D. 25 seconds E. None of these

11. Train A has a speed of 50 kmph and starts from Delhi towards Dehradun.Train B has a speed of 60 kmph and travels from Dehradun towards Delhi. Distance between Delhi and Dehradun is 600 km. If Train B starts 1 hour after Train A, what is distance between Dehradun and the meeting point of both the trains?

A. 200 km B. 250 km C. 350 km D. 300 km E. None of these

12. Train A and Train B are moving in the same direction. Anshu is walking inside Train A in the direction of movement of the train at the speed of 4km/h. Shiva is walking inside Train B in the direction opposite to the movement of the train at 7 kmph. The relative speed of Anshu and Shiva with respect to each other is 6 kmph. What is speed of the train B if speed of train A is 40kmph?

A. 47 kmph B. 50 kmph C. 45 kmph D. 40 kmph E. None of these

13. A train of length 240 m is running at a speed of 72 km/hr. In how much time will it cover a 480 m long tunnel?

 A. 36 sec
 B. 30 sec
 C. 28 sec
 D. 42 sec
 E. None of these

14. A train running 9/23 of its own speed reached a place 35 hour late. Find the speed of the train in km/hr?

A. 22.5 km/hr B. 35 km/hr C. 45 km/hr D. 17.5 km/hr E. Can't be determined

15. At 9: 00 PM Rajdhani express leaves Delhi for Patna at the rate of 96 km/hr. At 11: 00 PM on the same day Shatabdi express leaves Patna for Delhi at the rate of 49 km/hr. At what time both the train will collide? (it is given that the distance between Delhi and Patna is 540 km and both the trains are running on the same track)

A. 01: 24 AM B. 02: 30 AM C. 00: 48 AM D. 01: 48 AM E. None of these

16. Two trains leave station P at 5 : 30 pm and at 7 : 00 pm respectively. They travelled at 48 km/h and 60 km/h. How many Kilometres away will the two trains meet?

17. A train can cross another train of equal length coming from the opposite direction with the speed of 108 km/h in 3 minutes. The speed of the other train is 90 km/h. Find the length of the train.

A. 5940 m	B. 5490 m	C. 4950 m	D. 4590 m	E. None of these

18. Two trains are running on parallel lines in the same direction at speeds of 60 km/h and 35 km/h respectively. The faster train crosses a man inside the slower train in 54 seconds. If the length of the slower train is 4/5th of the faster train, find the length of the slower train.

A. 250m B. 375m C. 450m D. 396m E. None of these

- 19. A train can cross a platform of equal length in 50 seconds. It can cross another platform of length 450 m in 1 minute. Find the length of the train.
 A. 321.42 m
 B. 131.42 m
 C. 421.42 m
 D. 381.42 m
 E. None of these
- 20. The length of Train18 is half of the length of Train19 and is running at a speed of 90 km/h in the opposite direction. Train19 running at 126 km/h completely crosses Train18 in 9 seconds. Train19 takes _____ seconds to cross a platform of length 550 metres.
 A. 36
 B. 32
 C. 28
 D. 26
 E. 22
- 21. A bullet train D which is 320 metres long is moving with an average speed of 120 km/h crosses a bridge in 24 seconds. A farmer walking in the field crosses the same bridge in 4 minutes. Determine the speed of the farmer in m/sec?

 A. 1.87
 B. 1.1
 C. 1.5
 D. Can't be determined
 E. None of these
- 22. Two trains A, and B of same length start from Chennai for Bangalore at 10:00 pm. After travelling for 50% of the total distance train A meets with an accident and starta travelling at the rate of 2/3rd of its original speed. In this way, both the traina reach Bangalore at 08:00 am. Find the ratio of their original speed?

A. 3 : 2 B. 5 : 3 C. 5 : 2 D. 5 : 4 E. Can't be determined

- 23. Two trains are running in same direction at speed of 72 km/h and 102 km/h, their lengths are 550 m and 350 m respectively. What is the time taken (in seconds) by faster train to cross the slower train?
 A. 114
 B. 96
 C. 90
 D. 108
 E. 102
- 24. Train 1 crosses Train 2, which is coming on parallel track from opposite side, in 10 seconds . One of the trains has speed 90kmph. The speed of one of the train is 25% more than the other train such that both the speeds are in integer form, and the difference between their length is 150 meters. If the speed of Train 1 is greater than the speed of Train 2, then which of the following statements is correct ?

A. Length of Train 1 is 150 m

- B. Length of Train 2 is 150 m
- C. Sum of Length of both the Trains is 300 m
- D. Length of one train is twice the other
- E.More than one option are correct.

25. Time taken by train A and train B to cross each other while going in the same direction and opposite direction is 75 seconds and 15 seconds respectively. The ratio of length of train B to that of train A is same as the ratio of speed of train B to the speed of train A. Find the average of time taken by train A to completely pass through a tunnel of twice its length and train B to pass through a tunnel of twice its length if train A is shorter than train B by 120 meters.

A. 16 seconds B. 24 seconds C. 30 seconds D. 45 seconds E. 60 seconds

- 26. In a 2 km race, when Bantu starts 100 m ahead of his brother Gattu, both complete the race at the same time. In a 3 km race if Gattu starts 100 m ahead of Bantu, then both finish the race in the same time. If Gattu runs both the races with the same speed, in approximately what ratio must Bantu have increased his speed in the second race?
 - A. $\frac{13}{12}$ B. $\frac{13}{10}$ C. $\frac{12}{15}$ D. $\frac{12}{12}$ E. $\frac{15}{13}$
- 27. A train running at an average speed of 60 km/hr covers 240 km until it reaches its first stoppage where it stops for 'x' minutes. After stopping for 'x' minutes the train covers the remaining distance at an average speed of 80 km/hr until it reaches its destination and the total time taken by the train to cover its entire distance is 8 hours 54 minutes. Had the remaining distance been covered by the train at a speed which increases by 10 km/hr every hour starting with 40 km/hr then the remaining distance would have been covered in 53/9 hours, then find the value of 'x'

 A. 6
 B. 12
 C. 7
 D. 8
 E. None of these

28. Two trains start simultaneously from two stations Mumbai and Hyderabad towards each other respectively. The first train covers 16% of the distance between the two stations in 6 hours, the second train covered 14/120 of the distance in 5 hours. Find the speed (miles/h) of the second train if the first train travelled 1600 miles to the meeting point.

A. 80.625 miles/h B. 72.25 miles/h C. 70 miles/h D. 60 miles/h E. 80 miles/h

29. A train travelling at 73 kmph crosses another train of length equivalent to two – thirds of its own length travelling in opposite direction at 53 kmph in 18 seconds. It crosses a bridge in 36 seconds. What is the length of the bridge ? (in m)

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A. 352 m B. 482 m C. 362 m D. 472 m E. None of these
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30. Train M starts from station P at 3 pm and moves towards station Q with the speed of 36km/h and train N starts from station Q at 6 pm and moves towards station P with the speed of 48 km/h. They meet each other at 9 pm. Find the total distance travelled by both the trains together to reach their respective destinations.

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A. 720 km B. 360 km C. 540 km D. 960 km E. None of these
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31. A train Pawan express of length 380 m running with the speed of 108 km/h crosses a platform of certain length in 37 seconds. Another train, Toofan express of certain length running with a speed of 90 km/h crosses the platform in 42.6 seconds. What will be the time taken by both trains to cross each other if they run in opposite directions.

A. 12 seconds B. 10 seconds C. 9 seconds D. 14 seconds E. 13 seconds

32. A train crosses a bridge and a platform of length 500m and 800 m in 20sec and 30sec respectively. Find the time taken by this train to cross another stationary train of length 80m.

A. 5 seconds	B. 4 seconds	C. 3 seconds	D. 6 seconds	E. 8 seconds

33. It takes 48 seconds for a train travelling at 63 km/hr to cross another train half of its length tavelling in opposite direction at 51 km/hr. The first train passes a bridge in 66 seconds. What is the approximate length of the bridge (in m)?

A. 154 m B. 142 m C. 160 m	D. 184 m	E. 175 m
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34. Two trains A and B, start from stations X and Y respectively and travel towards each other. A and B take 196 minutes and 144 minutes respectively to reach Y and X respectively after they meet. If train A is moving at 36 km/hr, then what is the speed of train B?

A. 24 KIII/III B. 48 KIII/III C. 42 KIII/III D. 54 KIII/III E. 00	50 km/hr
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35. A 300 m long train crosses a pole in 8 seconds. The same train crosses a man running in the same direction in 10 seconds. What will be the speed of man?

A. 10.2 m/s	B. 7.5 m/s	C. 12.5 m/s	D. 9.25 m/s	E. 11.5 m/s
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- 36. Train A crosses a pole and a platform in 25 sec and 46 sec respectively. The length of the platform is 168 m. What will be the length of train B, if its length is equal to the sum of half the length of train A and twice the length of the platform?

 A. 436 m
 B. 336 m
 C. 426 m
 D. 355 m
 E. 424 m
- **37.** A 560 m long train, travelling at a uniform speed, crosses a platform in 60 seconds and a man standing on the platform in 10 seconds. What is the length of the platform?

A. 2800 m B. 5600 m C. 4800 m D. 2600 m	E. 2900 m
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38. A train passes two platforms of length 1200 metres and 600 metres in 200 seconds and 120 seconds respectively. What is the length of the train if the speed is equal while crossing both platforms?

A. 120 m B. 150 m C. 180 m D. 300 m E. 225 m

39. A train can cross another train of equal length coming from the opposite direction with the speed of 108 km/h in 3 minutes. The speed of the other train is 90 km/h. Find the length of the train.

A. 5940 m B. 5490 m C. 4950 m D. 4590 m E. None of thes	A. 5940 m	B. 5490 m	C. 4950 m	D. 4590 m	E. None of these
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40. A train can cross a platform of equal length in 5 minutes. It can cross a man running in the direction of the train with the speed of 2m/s in 7 minutes. Find the speed of the train(in km/h).

A. 10.8 B. 25 C. 7 D. 11.2 E. None of these

41. Train A starts from station P at 3 pm and moves towards station Q with the speed of 108km/h. Train B starts from station Q at 5 pm and moves towards station P with the speed of 122 km/h. If the distance between station P and station Q is 1136 km. Find the distance between meeting point and station A.

A. 864 km B. 846 km C. 648 km D. 684 km E. None of these

42. A train can cross another train of length 560 m coming from the opposite direction with the speed of 20 m/s in 30 seconds. It can cross a platform having length equal to the length of the train in 1 minute 20 seconds. Find the length of train.

A. 150 m B. 130 m C. 145 m D. 160 m E. None of these

43. A train with speed 32 m/s can cross another train of length 540 meters coming from the opposite direction with the speed of 48 m/s in 15 seconds. It can cross a platform in 25 seconds. Find the length of the platform.

A. 140 m B. 180 m C. 260 m D. 320 m E. None of these

44. A train of length 450 m running at the speed of 72 km/h can cross another train running at the speed of 54 km/h in the same direction in 4 minutes. Find the length of another train.

A. 620 m B. 750 m C. 480 m D. 540 m E. None of these

45. Two train starts at the same time from Kanpur and Jammu and proceed towards each other. When they meet it is found that one train has travelled 150 km more than the other train. What is the distance between Kanpur and Jammu, if the speed of 1st train is 80 km/h and that of 2nd train is 75 km/h?

A. 5640 km B. 5460 km C. 4560 km D. 4650 km E. None of these

46. When the trains run in opposite direction, the relative speed is double the relative speed when the trains run in the same direction. The length of the trains is 300 m and 320 m respectively. Find the time taken by the trains to cross each other when in opposite direction, if they take 20 seconds to cross when in the same direction?

A. 8 sec B. 6 sec C. 7 sec D. 9 sec E. 10 sec

47. A train of length 500 m crosses a platform of length 50% more than the length of the train in 50 seconds. Find the time taken by this train to cross another train of same length running with double the speed of first train in the opposite direction.

A. 13 sec B. 15 - sec C. 13 - sec D. 13 - sec E. 14 sec

48. 512 passengers get into a train at the first station. At every subsequent station half the passengers get down and no passengers get in. If only one passenger is left in the train to get down at the last station, at how many stations did the train stop in

between the source and destination station?A. 10B. 8C. 9D. 7E. None of these

- 49. The length of two train is 120 m each. The ratio of time taken by them to cross a pole is 2: 3 and the difference of time taken by them to cross the pole is one minute. Find the time taken by them (in seconds) to cross each other travelling in opposite direction?
 - A. 150 sec B. 36 sec C. 144 sec D. 96 sec E. None of these
- **50.** Two trains, P and Q of equal length are running in the opposite direction. The time taken by them to pass an electric pole is 24 seconds and 30 seconds respectively. Find the time (approximately) in which both trains will cross each other?
 - A. 26.67 seconds B. 26.33 seconds C. 27.67 seconds D. 26.33 seconds E. 25.33 seconds

1	А	11	D	21	E	31	E	41	С
2	А	12	С	22	D	32	D	42	D
3	С	13	А	23	D	33	В	43	А
4	С	14	E	24	D	34	С	44	В
5	С	15	А	25	D	35	В	45	D
6	С	16	D	26	D	36	А	46	E
7	В	17	С	27	E	37	Α	47	D
8	С	18	Е	28	С	38	D	48	С
9	В	19	А	29	Α	39	С	49	С
10	E	20	D	30	Α	40	D	50	А

ANSWERS