TIME, SPEED AND DISTANCE

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

1. **Anju starts walking from U towards V with speed 5 km/hr and Rani starts on her scooty from V towards U with the speed 45 km/hr. In how much time do they meet if both starts at 6 am and distance between U and V is 320 km?**

   A. 1:35 pm B. 12:24 pm C. 12:36 pm D. 11:45 am E. 2:24 pm

2. **Ashwini and Alpana run a 14.4 km race on a circular track of circumference 960 m and the two complete one round in 12 seconds and 16 seconds respectively. After what time (in seconds) from the start will the faster person meet the slower person for the last time?**

   A. 132 B. 120 C. 138 D. 144 E. None of these

3. **During normal hours, a motorcyclist can cover a distance of 136 km in 2 hours but during the peak hours due to traffic his speed is decreased by 20%. If the motorcyclist wants to travel 190.4 km during normal hours and return the same distance during peak hours, then total how much time will he take to cover the journey?**

   A. 6 hours 18 minutes B. 6 hours 24 minutes C. 6 hours 30 minutes D. 6 hours 36 minutes E. None of these

4. **Lewis and John run a 10 km race on a circular track of length 1000 m. They complete one round in 200 seconds and 400 seconds respectively. After how much time from the start will the faster person meet the slower person for the last time?**

   A. 500 seconds B. 1000 seconds C. 2500 seconds D. 1500 seconds E. 2000 seconds

5. **Arun has to meet Anita at a restaurant at 2 : 30 PM. He starts from his home when his wristwatch shows 12 : 30 PM and he knows he should have left 30 minutes before to reach on time, so he speeds up and reaches the restaurant when his wristwatch shows 2 : 30 PM. When he talks to Anita after reaching the restaurant he comes to know that he has actually arrived 30 minutes early and also that his watch is running 30 minutes ahead of time. To complete the journey on time by how much percent he had to increase his average speed?**

   A. 20% B. 33.33% C. 25% D. 66.66% E. None of these

6. **A bus is 460m in front of the boy. The boy starts running towards the bus and at the same time the bus starts moving away from the boy. If the speed of the bus is 3m/s and the speed of the boy is 20 km/hr. In how much time will the boy catch the bus?**

   A. 60 seconds B. 90 seconds C. 180 seconds D. 120 seconds E. 150 seconds

7. **A and B are running on the boundary on two concentric circles with radii in the ratio 2 : 3. The speed ratio of A and B is 8 : 9, where A is running on the inner and B is running on the outer circle. Their starting points form a right angle at the centre of the circle. They both start running in same direction and after 7 seconds B completes a quarter of the outer circle. After how much time the distance between A and B will be minimum?**

A. 35 sec B. 49 sec C. 56 sec D. 63 sec E. None of these

8. **A person wants to travel to Indore which is 360 km from Bhopal. He travels half of the distance by bus then had lunch for 20 minutes in a dhaba. He then took a taxi to cover one-fourth of the distance and then took lift on a motorcycle to cover the distance left. The speed of bus, taxi and motorcycle is 90 km/hr, 60 km/hr and x km/hr respectively. If the bus starts at 9 am then by what range the value of x varies so that he reaches his destination after 2 pm.**

A. $90 \geq x \geq 80$ B. $60 \geq x \geq 45$ C. $120 \geq x \geq 90$ D. $80 \geq x \geq 70$ E. None of these

9. **Sunny covers a certain distance in a certain time. While returning, he takes only 1/3rd the time he took for the outward journey. What is the ratio between the average speed for the entire journey and his original speed?**

A. 2 : 3 B. 3 : 2 C. 4 : 5 D. 5 : 4 E. 3 : 1

10. **Dutee Chand and PT Usha completed a race of ___ metres length at the same time. Dutee Chand is 500/3% as fast as PT Usha. PT Usha is given a head start of 200 metres.**

A. 550 B. 505 C. 500 D. 555 E. 250

11. **A, B and C start running around a circular field having circumference 150 metre at the same time from the same point. Speeds of A, B and C are 2 m/minute, 2.5 m/minute and 3 m/minute. Find after how much time, they will meet again at the same point for the first time.**

A. 9 hours B. 7 hours C. 6 hours D. 5 hours E. None of these

12. **A man can swim to a place 120 km distant and come back in 35 hours. He finds that he he can swim 6 km against the stream in the same time as 8 km with the stream. Find the ratio of speed of man in still water to that of stream?**

A. 5 : 2 B. 4 : 7 C. 7 : 1 D. 2 : 9 E. None of these

13. **In a 1500 m race, Chaitali beats Vrunali by 100 m and in 1200 m race, Vrunali beats Krutika by 75 m. If Chaitali and Krutika are compared, then for how much m Chaitali will beat Krutika in 900 m race?**

A. 115 m B. 112.5 m C. 110 m D. 120 m E. 135 m

14. **A military truck covers a distance of 9072 km travelling continuously for 5 days 6 hrs. If it covers 4320 km in half the time, by how much does the speed of the military truck for the remaining part of the journey differ from that for the entire journey?**

A. 3.2 km/h more B. 3.2 km/h less C. 3.43 km/h more D. 3.43 km/h less E. 4 km/h less

15. **Devesh covers a certain distance between his business place and home in car. With an average speed of 20 km/h, he got late by 30 min. However with a speed of 40 km/h, he reaches his office 15 min earlier. Find the distance between his home and business place.**

A. 22 km B. 26 km C. 30 km D. 28 km E. 25 km

16. **Two trucks 'X' and 'Z' were moving towards each other which were 490 km away initially. If the ratio of the speed of the trucks 'X' and 'Z' was 4 : 3 and the speed of the truck 'Z' was 60 km/h, what time will it take for the two trucks to meet each other?**

A. 210 min. B. 240 min. C. 180 min. D. 270 min. E. 225 min.

17. **A cruise was 100 km from the nearest shore when the captain discovered a leak which admits 5 tons of water every 10 minutes, 120 tons would suffice to sink the cruise. The captain came up with a temporary solution by fixing a pump which can throw 10 tons of water in an hour. Find the average sailing rate of the cruise that may just allow cruise to reach the nearest shore**

A. 14.28 km/hr B. 20 km/hr C. 16.67 km/hr D. 6 km/hr E. None of these

18. **The ratio of speeds of a tiger and horse is 3 : 2. Both start from place A at the same time and reach place B, which is 75 km away from place A at the same time as the tiger lost about 12.5 minutes while hunting a deer. Find the speed of the horse.**

A. 120 km/h B. 150 km/h C. 80 km/h D. 70 km/h E. None of these

19. **In a cycle race from Bhubaneshwar to Puri the cyclist who came last travelled 19 km less distance in 5 hours than the distance travelled by the cyclist in 6 hours who came first and, the distance travelled by the cyclist who came last in 8 hours is 6 km more than the distance travelled by the cyclist in 4 hours who came first. Which of the following can be the speed range of the cyclists?(in kilometers per hour)**

A. 5 – 6 km/hr B. 4 – 6.5 km/hr C. 3.5 – 5 km/hr D. 5 – 8.5 km/hr E. None of these

20. **In a to-and-fro journey, the speed of the bus is 20 kmph and 15 kmph respectively. If it takes 14/5 hours to complete the whole ride, which of the following will be the total distance traveled by the bus?**

A. 40 km B. 42 km C. 24 km D. 48 km E. None of these

21. **A person starts driving from Mumbai to Pune at a speed of 45 kmph. After covering 50% distance, he realised that he won't reach on the estimated time if he continues with same speed. He thus increased his speed by 33.33% and reach the destination on the time. Had he not increased the speed, he would have got late by one hour. Find the time taken by him to travel Mumbai from Pune if the speed of the car is 120 kmph?**

A. 2 hours B. 4 hours C. 5 hours D. 2.5 hours E. 3 hours

22. **Point P and Q are 500 km apart. Car A starts from P to Q at 7 am and Car B starts from Q to P at 9 am. Speed of Car A was double than Car B. After they meet at some point, speed of both car A becomes same as Car B. A reaches point Q at 1 pm. What is the speed of car A?**

A. 50 kmph B. 100 kmph C. 80 kmph D. 90 kmph E. 120 kmph

23. **The average speed of a train is five times of the average speed of a car. If the difference between the time taken by them to cover a distance of 1260 km is 168 hours then find the time taken by the train will take to cover the same distance?**

A. 33.6 hours B. 42 hours C. 56 hours D. 21 hours E. None of these

24. Raju can travel from his house to school in x hours if he does not stop anywhere. One day, he increases his speed by 4 km per hour but stops for 15 minutes on a tea shop then he reaches 5 minutes earlier. If the distance from his house to the school is 40 km then find the value of x?

A. 4 B. 2 C. 1 D. 1.7 E. None of these

25. The distance between two bus stop at lucknow and Delhi is 450 km. A bus starts from Lucknow and moves towards Delhi at an average speed of 15 km/h. Another bus starts from Delhi, 20 min earlier than the bus at Lucknow and moves towards Lucknow at an average speed of 20 km/h. How far from Lucknow and from Delhi will the two bus meet respectively?

A.190 km, 260 km B. 290 km,160 km C. 260 km,190 km D. 160 km, 290 km E. None of these

26. Two friends, Seeta and Geeta start running from the same point P in the same direction at 7 : 00 am and 8: 00 am respectively. At 10 : 30 am the first time Geeta catches Seeta and at 12 : 15 PM on the same day, reach other Point Q in the same straight line. At what time, will Seeta reach the point Q?

A. 1 : 12 PM B. 1 : 07 PM C. 12 : 57 PM D. 12 : 45 PM E. Can't be determined

27. Ram started for Delhi from Patna at 25 km per hour. After sometime, he realized that at this speed he will be late by 4 hours or could cover only 60% of the total distance till the scheduled time so immediately he doubled his speed and reached Delhi on time. After how many hours of starting journey did he double his speed? (it is given that the distance between Delhi and Patna is 500 km)

A. 16 hr B. 12 hr C. 18 hr D. 10 hr E. None of the above

28. The distance between a school and home is 24 km. Two persons A and B start from the home and the school at the speed of 12 km per hour and 10 km per hour respectively in the same direction and meet each other at the college. What is the distance between the school and the college? (assume that the home is before school and both are in the same straight line)

A. 144 km B. 220 km C. 120 km D. 240 km E. None of these

29. Two runners A and B start running simultaneously from a point P around a circular park at the speed of 15 m per sec and 25 m per sec respectively in the opposite direction of each other. If the circumference of the park is 600 meters then at what distance from point P will then meet each other for the second time?

A. 72 B. 74 C. 75 D. 80 E. None of these

30. The average speed of a tractor is four – fifth of the average speed of a bus. Both vehicles start simultaneously from Bangalore at 09 : 00 AM and reach Chennai together at 06 : 00 PM on the same day. For bus, one halt was scheduled on the way. For how long (in minutes) was the halt scheduled?

A. 112 B. 108 C. 72 D. 90 E. None of these

31. Divya started from her house at 6:30 AM and travelled some distance till 7:30 AM. After covering 75% of that distance further, she found that she had covered 75% of total distance. Find the fraction of the total distance travelled by her by 8:30 AM.

A. $\frac{3}{7}$ B. $\frac{4}{7}$ C. $\frac{6}{7}$ D. $\frac{2}{3}$ E. $\frac{5}{9}$

32. Amit, Anil and Ajit ride from home to their common office with speeds in the ratio 5 : 4 : 3. If in total they take 94 minutes (sum of the individual time taken) to cover the individual distance (which is same for all), then find the time taken by 'Anil' to cover his distance.

A. 30 min. B. 48 min. C. 24 min. D. 40 min. E. None of these

33. Ashok and Bimal runs on a 450 m long circular track at a speed of 12 m/s and 18 m/s respectively. They start at same time but run in opposite direction. Find the number of times, they would have met when Bimal covers 3240 meters.

A. 12 B. 10 C. 14 D. 16 E. 18

34. Pankaj was travelling to point B from point A with speed of 45 km/hr. After 1 hour, Pratik also started to travel from point A to point B. Pratik reached the point B 30 minutes before Pankaj. If Pratik would have decreased his speed by 6 km/hr then both would have reached point B at the same time. Find the original speed of Pratik.

A. 55 km/hr B. 60 km/hr C. 54 km/hr D. 64 km/hr E. 65 km/hr

35. Rahul travels every day from Powai to Juhu and back to Powai by train which takes 70 minutes for each journey. At a particular day the train starts 14 minutes late from Powai but reaches Juhu on time, while on return travel from Juhu due to some problem train reaches Powai 20 minutes late. If the average speed of the train on this particular day was 56km/h what is the general average speed of the train?

A. 62 km/h B. 58.4 km/h C. 56 km/h D. 55.4 km/h E. None of these

36. Two friends A and B, with speed in the ratio 9 : 3, are running on track PQ. A starts from P towards Q and when he reaches point exactly in the middle of the track, B starts running from P towards Q. A reaches Q turns back and continues towards P and meets B at a distance of 155 m from Q. What is the total length of the track?

A. 320 m B. 248 m C. 243 m D. 280 m E. None of these

37. A train goes 2210 km from Station A to station B and completes the journey in time. In return journey, due to some engine problem train starts 20 hrs late and to reach on time trains average speed is increased by 8km/hr. What was the original speed of train?

A. 24 km/h B. 26 km/h C. 27 km/h D. 21 km/h E. None of these

38. A and B are cycling on a circular track of radius 441m. The speeds of A and B are in the ratio 7:4, and A alone can complete one round of the track in 99 seconds. A starts from a point P in clockwise direction and B starts from point Q in anti-clockwise direction and they meet after 55 seconds at point R. What is the length of the minor arc PQ on the track?

A. 172 m B. 168 m C. 176 m D. 352 m E. None of these

39. Karan beats arjun by 420 m in a 1260 m race. Then they go to race on a slope where Karan starts from bottom of the slope and Arjun starts from top of the slope they run towards each other and when they meet Arjun has travelled 50m more than Karan. If the speed of any person on the slope, compared to normal speed, becomes 25% more in decline and 200/7% less in incline, what was the total length of the slope?

A. 600 m B. 720 m C. 680 m D. 650 m E. None of these

40. A and B with speed in the ratio 5: 1 are running on a circular track with centre O. A and B start from a point P and run in same direction, whenever they meet B starts moving in the opposite direction but A continues in the same direction. If they meet for the third time at point T, what is the value of ∠POT?

A. 45° B. 120° C. 84° D. 72° E. None of these

41. A and B are two friends running on a race track PQ. A starts from point P and B starts from point Q and they run towards each other. When they meet at point R, A continues running towards Q while B takes a U turn and run towards Q and after reaching Q again turns and meets A for the second time at point S. If the ratio of speeds of A and B are in the ratio 3:11 and distance RS is equal to 297m, What is the length of the track PQ?

A. 826 m B. 882 m C. 784 m D. 966 m E. None of these

42. 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

43. If the respective ratio of the speed of two persons, A and B is 4 : 5. If A can complete a distance of 240 km in 25 minutes then find speed of B?

A. 720 km per hour B. 710 km per hour C. 755 km per hour D. 730 km per hour E. None of these

44. Anurag walked 13 km to reach the bus stand from his home, then he boarded a bus whose average speed was 55 kmph and thus he reached his office. In this way he took a total time of 2.5 hours. If the average speed of the entire journey was 36 kmph then the average speed of walking is?

A. 11.8 kmph B. 11.6 kmph C. 12.1 kmph D. 11.4 kmph E. None of these

45. The ratio between the speed of a train and a car is 18 : 3 respectively. Also, a bus covered a distance of 480 kms in 12 hours. The speed of the bus is five-ninths the speed of the train. How much distance will the car cover in 5 hours?

A. 150 kms. B. 180 kms. C. 160 kms. D. Can't be determined E. None of these

46. In a race of one kilometre, A gives B a start of 40 meters and still wins by 20 seconds. When A gives B a start of 30 seconds, B wins by 50 meters. The time taken by A to run one kilometre is

A. 125 seconds B. 120 seconds C. 100 seconds D. 96 seconds E. None of these

47. The length of a circular path is 20 km. Three runners start running from a point in same direction with speed of 4 km/hr, 5 km/hr and 8 km/hr respectively. After how many hours will they be together at the starting point again?

A. 20 hr B. 18 hr C. 16 hr D. 21 hr E. None of these

48. The respective ratio of the speed of three persons A, B, and C is 4 : 5 : 6. If A takes 2.5 hours more than B to cover a certain distance then how many hours will C take to cover double of the distance?

A. 15 hrs B. $16\frac{2}{3}$ hrs C. $18\frac{1}{3}$ hrs D. 18 hrs E. None of these

49. Two friends, A and B started simultaneously from a point P at the speed of 10 km per hour and 15 km per hour respectively and reach the destination at 3 pm and 1 pm respectively. At what time did they start from the point P?

A. 9 am B. 9 : 30 am C. 10 am D. 10 : 30 am E. Can't be determined

50. In a race of 500 meters, Tom runs at the speed of 18 km per hour. Tom gives a start of 50 meters to Jerry but still beats him by 12.5 seconds. Find the speed of Jerry (in km per hour)?

A. 16 km per hour B. 15.6 km per hour C. 14.6 km per hour D. 14.4 km per hour E. None of these

ANSWERS

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