

Motion and Time

<1M>

1. Three types of motion are-

- (A) Circular, Rotational and Vibratory. (B) Rectilinear, Circular and Periodic.
(C) Uniform, Periodic and Circular. (D) Non uniform, Periodic and Temporary.

2. What is speed?

3. Define non-uniform motion?

4. Which devices are used to measure time intervals?

5. What is a bob?

6. What is a periodic motion?

7. Define time period of a simple pendulum?

8. What are quartz clocks?

9. What is the use of odometer in a vehicle?

10. What is the use of speedometer in a vehicle?

11. Basic standard unit of time is a-

- (A) Second. (B) Hour. (C) Minute. (D) All of these.

12. Quartz clocks-

- (A) Have an electric circuit with one or more cells.
(B) Show more accurate time than the clocks available earlier.
(C) Have a pendulum.
(D) Are more accurate because they have an electric circuit with one or more cells.

13. Slower moving vehicle will have-

- (A) Higher speed. (B) Slower speed. (C) Equal speed. (D) More distance.

14. The time period of a simple pendulum does not change, if the displacement of bob is slightly changed.

- (A) The statement is not always true. (B) The statement is always true.
(C) The statement is sometimes true. (D) The statement is absolutely wrong.

15. Time period is measured by-

- (A) Releasing the bob from its extreme position and not pushing it.
(B) Counting the oscillations when the bob is on the extreme.
(C) Noting the time taken by the bob to complete about 20 oscillations and dividing it by the number of oscillations.
(D) All of these.

16. Speed can be defined as the-

- (A) Distance travelled in unit time. (B) Distance travelled.
(C) Distance travelled by light. (D) None of these.

17. Time period is defined as-

- (A) The time taken to complete one revolution.
- (B) The time taken to go from one extreme to the other.
- (C) The time taken to return to mean position from the extreme on one side only.
- (D) All of these.

18. Average speed is the total distance covered-

- (A) Divided by the distance travelled in one hour.
- (B) Multiplied by the total time taken.
- (C) Divided by the total time taken.
- (D) All of these.

19. An oscillation is said to be complete when-

- (A) The bob of pendulum starts from its mean position.
- (B) The bob of pendulum moves to extreme on one side and goes to the extreme on the other side.
- (C) The bob of pendulum returns to its original mean position.
- (D) The bob of the pendulum starts from its mean position, goes to extreme on one side and then to extreme on the other side and finally comes to the mean position.

20. Periodic motion is also known as-

- (A) Rectilinear motion.
- (B) Circular motion.
- (C) Non uniform motion.
- (D) Oscillatory motion.

21. In a uniform motion

- (A) Average speed is the same as the actual speed.
- (B) The object is moving along a straight line.
- (C) The object is moving with a constant speed.
- (D) All the three statements are true.

22. If a car is moving with a speed of 45 kilometers per hour, it implies that-

- (A) It will cover a distance of 45 metres in one minute.
- (B) It will cover a distance of 45 kilometers in one hour.
- (C) It will cover a distance of 45 miles in one hour.
- (D) It is moving with a constant speed of 45 kilometers per hour.

23. Periodic motion is the motion which-

- (A) Repeats itself after a regular interval of time.
- (B) Repeats itself after an indefinite time.
- (C) Does not repeat itself.
- (D) None of them.

24. Time intervals shorter than a day can be measured by using a-

- (A) Clock.
- (B) Watch.
- (C) Stop Watch.
- (D) Clock, watch or stop watch.

25. If the speed of an object moving along a straight line keeps on changing,

- (A) The motion is said to be a uniform motion.
- (B) The motion is said to be a non uniform motion.
- (C) The object is said to be stationary.
- (D) The motion is said to be a fast motion.

26. A year was fixed as the time taken by-

- (A) The Earth to complete one revolution around its axis.
- (B) The Earth to complete one revolution around the Sun.
- (C) The moon to complete one revolution around the Earth.
- (D) The satellite to complete one revolution around the Earth.

27. The time between one new moon to the next can be called a-

- (A) Month.
- (B) Year.
- (C) Day.
- (D) Interval.

28. The time between one sunrise and the next is known as a-
 (A) Month. (B) Year. (C) Day. (D) Interval.
29. Speed is directly measured by using a device called-
 (A) Odometer. (B) Speedometer. (C) Both (1) and (2). (D) None of these.
30. The most common example of periodic motion is-
 (A) Digital clock. (B) Simple Pendulum. (C) Moving car. (D) Movement of a pedestrian.
31. If the distance-time graph is a straight line, it indicates-
 (A) The speed of the object keeps on changing. (B) The object is moving with a constant speed.
 (C) The object is not moving. (D) None of these.
32. A faster moving object covers-
 (A) Less distance in more time. (B) More distance in more time.
 (C) Less distance in shorter time. (D) More distance in shorter time.
33. A simple pendulum consists of-
 (A) Small metallic ball - bob only. (B) A string only.
 (C) Small metallic ball suspended from a rigid stand by a string. (D) None of these.
34. The distance-time graph can be used to find-
 (A) Distance moved by an object at any instant of time. (B) Speed of the object.
 (C) Distance moved by an object during definite time intervals. (D) All of these.
35. A dog is running at a speed of 36 km/h. Its speed in m/s will be-
 (A) 10. (B) 3.6. (C) 100. (D) 360.
36. The total time taken by a vehicle to cover the total distance is given by-
 (A) total distance covered Total time taken = average speed
 (B) average speed Total time taken = total distance covered
 (C) total distance covered Total time taken = speed
 (D) speed Total time taken = total distance covered
37. Pendulum is used in-
 (A) Water clocks. (B) Pendulum clocks. (C) Sundials. (D) All of them.
38. Unit of speed is-
 (A) m/s. (B) m/min. (C) km/h. (D) All of them.
39. The to and fro motion is an example of-
 (A) Circulatory motion. (B) Oscillatory motion. (C) Periodic motion. (D) Both (b) and (c).
40. The distance time graph is a straight line when-
 (A) An object changes its speed frequently. (B) An object changes its direction frequently.
 (C) An object changes is in rest position. (D) An object moves with a constant speed.

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41. A simple pendulum takes 15 seconds to complete 5 oscillations. What is the time period of the pendulum?

42. How do we know an object is moving faster?

43. If a car is moving with a speed of 5 km/h on a highway find the distance travelled by the car in 3 hours?

44. The distance between two stations is 240 km. A train takes 6 hours to cover this distance. Calculate the speed of the train.

45. Explain how motion of a child on a see-saw is an oscillatory motion.

46. What is the nature of distance-time graph for the motion of an object moving with a constant speed?

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47. Explain how in ancient times, a day, a month and a year was measured.

48. Explain the different positions of the bob of the simple pendulum while it oscillates.

49. Priya takes 20 minutes from her house to reach her school on a bicycle. If the bicycle has a speed of 2 m/sec, calculate the distance between her school and her house.

50. A car is moving with speed 72 km/hr. Convert this speed into metre/sec.

51. What are the important points to be kept in mind while choosing the scale for a graph?

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52. What are the points that should be kept in mind while choosing scale for drawing a graph?

53. Show the distance-time graph for the motion in the following cases:

(i) A car moving with a constant speed.

(ii) A car parked on a side road.

(iii) A car moving with non-uniform speed.

54. What are the uses of distance-time graphs?

55. Describe a simple pendulum with the help of a neat labeled diagram.

56. Suggest an activity to measure the time period of the simple pendulum.