# **Distance – Time Graph**

## A. Choose the Correct Answer:

- 1. What does the slope of a distance-time graph represent?
  - A) Distance covered
  - B) Speed of the object
  - C) Time taken
  - D) Acceleration

# 2. If a distance-time graph is a straight line parallel to the time axis, what does it indicate?

- A) The object is moving with constant speed
- B) The object is at rest
- C) The object is accelerating
- D) The object is moving backward

#### 3. Which of the following distance-time graphs represents uniform motion?

- A) A curved line
- B) A zigzag line
- C) A straight-line sloping upwards
- D) A straight-line sloping downwards

#### **B. Fill in the Blanks:**

- 1. A distance-time graph is used to represent the \_\_\_\_\_\_ of an object over time.
- 2. The steeper the slope of a distance-time graph, the \_\_\_\_\_\_ the speed of the object.
- 3. A horizontal line on a distance-time graph indicates that the object is

#### C. Case Study:

A student named Rohan conducted an experiment to observe the motion of a toy car on a smooth surface. He recorded the distance covered by the car at regular time intervals and plotted a distance-time graph.

#### **Observations:**

- The graph was a straight line sloping upwards.
- The car covered equal distances in equal time intervals.

• The speed remained constant throughout the experiment.

## Case Study Questions:

- 1. What type of motion did Rohan's toy car exhibit?
- 2. What does the straight-line graph indicate about the speed of the car?
- 3. If the graph had been a curved line, what would it signify?
- 4. How can we determine the speed of the toy car using the distance-time graph?

# **D. Short Answer Questions:**

- 1. What is a distance-time graph?
- 2. How can we determine if an object is in uniform or non-uniform motion using a distance-time graph?
- 3. What does a steeper slope in a distance-time graph indicate?

# E. Long Answer Questions:

- 1. Explain the different types of distance-time graphs and their significance.
- 2. How can a distance-time graph be used to calculate speed? Explain with an example.
- 3. Describe a real-life situation where a distance-time graph can help in understanding motion.