

**GREENFIELDS PUBLIC SCHOOL DILSHAD GARDEN
SUMMER VACATIONS HOMEWORK**

CHAPTER - DESCRIBING MOTION AROUND US (2026-27)

SUBJECT: PHYSICS

CLASS : IX

1. Solve all the questions of the given ASSIGNMENTS in Assignment Register.

□ Assignment 1, Chapter 4: Describing Motion Around Us

2. Prepare & Revise given Chapters from NCERT book and do the practice of all NCERT examples thoroughly.

□ Chapter 4 : Describing Motion Around Us

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CHAPTER - DESCRIBING MOTION AROUND US (2026-27)

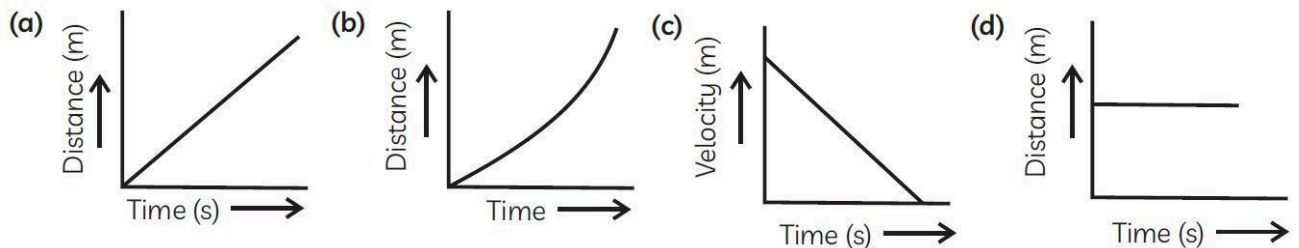
SUBJECT: PHYSICS

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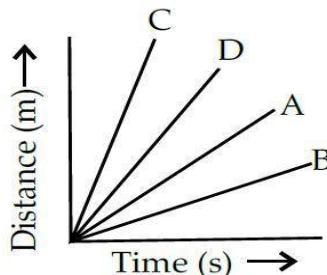
SECTION – A

1. Rita was enjoying a ride on a Ferris wheel which is revolving at a constant speed of 5 m/s. This shows that Rita is:
- (a) at rest (b) moving with no acceleration
(c) in accelerated motion (d) moving with uniform velocity

2. Which of the following figures represents the uniform motion of a moving object correctly?



3. Name the instrument which is used to measure the instantaneous speed of a vehicle.
- (a) Multimeter (b) Ammeter (c) Speedometer (d) Accelerator
4. Four cars A, B, C and D are moving on a levelled road. Their distance versus time graphs is



shown in figure. Choose the correct statement.

- (a) Car A is faster than car D (b) Car B is the slowest
(c) Car D is faster than car C (d) Car C is the slowest.

In the following questions 5 and 6, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- (b) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
(c) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
(d) Assertion is true but the Reason is false.
(e) Assertion is false but the Reason is true.

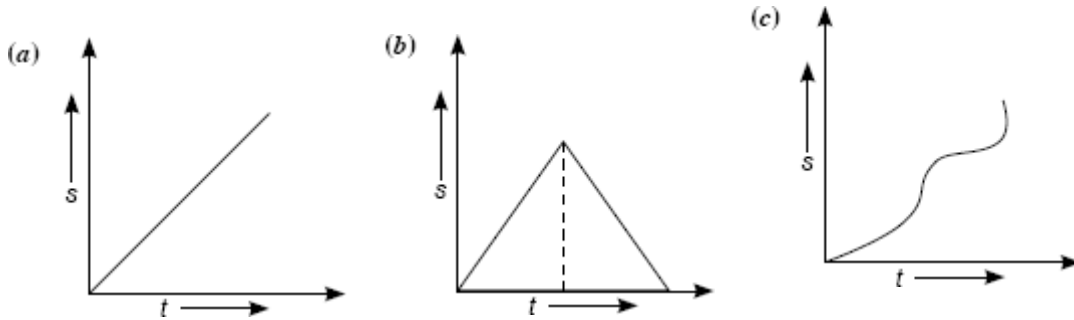
5. **Assertion (A):** The displacement-time graph of a body moving uniformly is a straight line.
Reason (R): A body travelling with uniform velocity covers equal distances in equal intervals of time with changing direction.
6. **Assertion (A):** If the velocity of a body in uniform motion changes, its acceleration cannot remain constant.
Reason (R): If a body is thrown vertically upward, the relationship between initial velocity (u) and acceleration (a) at any moment is $v^2 - u^2 = 2as$.

SECTION – B (2 marks)

7. A bus decreases its speed from 80 km h^{-1} to 60 km h^{-1} in 5 s. Find the acceleration of the bus.
8. A body is thrown vertically upwards with a velocity and caught back.
 - (a) What is its displacement and distance travelled?
 - (b) How do the displacement and distance change if its velocity of projection is halved?
9. Distinguish between uniform and non uniform acceleration.

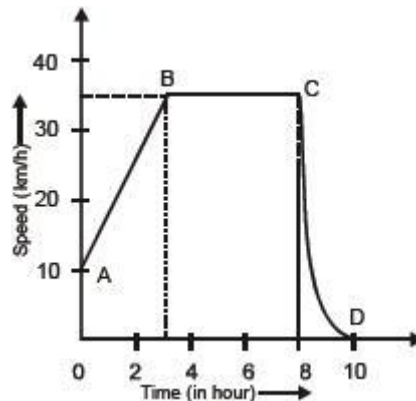
SECTION – C(3 marks)

10. A bus starting from rest moves with a uniform acceleration of 0.1 m s^{-2} for 2 minutes. Find (a) the speed acquired, (b) the distance travelled.
11. What type of motion is represented by following displacement-time graph:

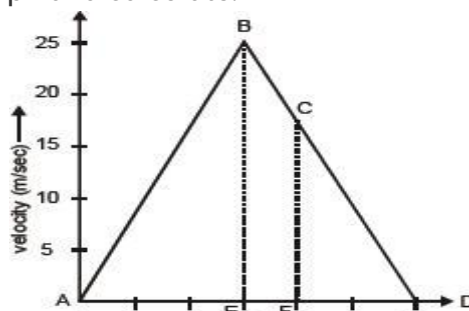


SECTION – D(5 marks)

12. The graph given alongside shows how the speed of a car changes with time.
 - (i) What is the initial speed of the car?
 - (ii) What is the maximum speed attained by the car?
 - (iii) Which part of the graph shows zero acceleration?
 - (iv) Which part of the graph shows varying retardation?
 - (v) Find the distance travelled in first 8 hours.



13. Study the velocity-time graph and calculate.



- (a) The acceleration from A to B

- (b) The acceleration from B to C
- (c) The distance covered in the region ABE
- (d) The average velocity from C to D
- (e) The distance covered in the region BCFE

14. The following table gives the data about motion of a car.

Time (h)	11.00	11.30	12.00	12.30	1.00
Distance (km)	0	30	30	65	100

Plot the graph.

- (i) Find the speed of the car between 12.00 hours and 12.30 hours.
- (ii) What is the average speed of the car?
- (iii) Is the car's motion an example of uniform motion? Justify.

15. (a) Derive the equation of motion $s=ut+\frac{1}{2}at^2$, using graphical method.

(b) A train starting from rest attains a velocity of 72 km/h in 5 minutes. Assuming the acceleration is uniform, find

- (i) the acceleration.
- (ii) the distance travelled by the train for attaining this velocity.

SECTION – E (Case Study Based Questions)

16. Read the given passage and answer the questions that follow based on the passage and related studied concepts.

A bus is moving with a velocity of 50 km/h. The driver sees a child running across the road and he pressed the brakes. The time taken by him to stop the bus in this emergency was $\frac{1}{10}$ th of a second. In a second case, another bus was coming on the same road at the same 50 km/h and the driver saw another child crossing the road. He applied the brakes and time taken by him to the emergency was 0.5 sec. Both the buses started moving to their destination after 10 minutes. Bus A moved at 45 km/h while bus B moved at 60 km/h.



- (a) What is the distance between buses A and B?
- (b) How much distance did the bus move in the 1st case before the driver could press the brakes?
How much is the distance between bus A and bus B after 1.5 hours?
- (c) How much distance did the bus move in the 2nd case before the driver could press the brakes?

