



DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2025-26
MONDAY TEST

CLASS: IX
SUBJECT: PHYSICS

FULL MARKS: 40
DATE: 12/05/2025

General Instructions:

- This paper consists of three printed pages.
- All questions are compulsory.
- Marks will be deducted for spelling errors.

SECTION A
(Attempt all questions.)

Question 1

Choose the correct answers to the questions from the given options.

[$1 \times 8 = 8$]

(i) The SI unit of force is:

- a) Ns b) kgm/s^2 c) kgm^2/s d) N/m

(ii) The size of a nucleus is measured by a small unit called

- a) angstrom b) nanometer
c) fermi d) micron

(iii) A simple pendulum has a time period T, if the length of the bob is made half, then the time period of the pendulum will be

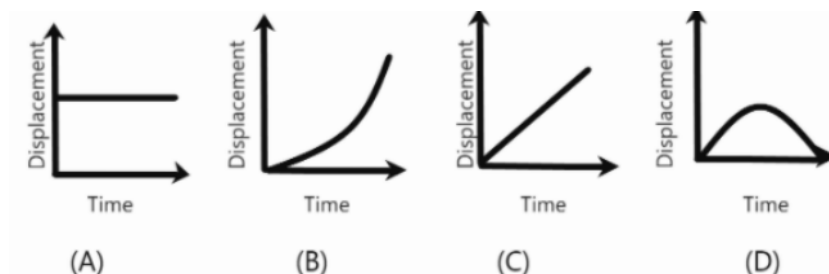
- a) 2T b) $\sqrt{2}T$ c) $T/\sqrt{2}$ d) T

(iv) Assertion: In uniform circular motion, the speed of the particle is constant.

Reason: In uniform circular motion, the direction of velocity changes continuously.

- a) both A and R are true and R is the correct explanation of A.
b) both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

(v) Which of the following graphs represents an accelerating motion?

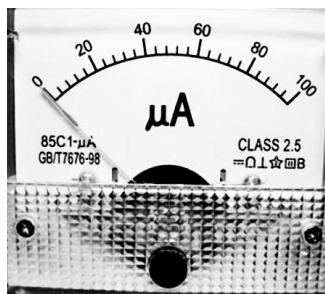


- a) A b) B c) C d) D

(vi) Which of the following is true for a freely falling body?

- a) it moves with uniform velocity b) it has zero velocity
c) it has constant acceleration d) it has non-uniform acceleration

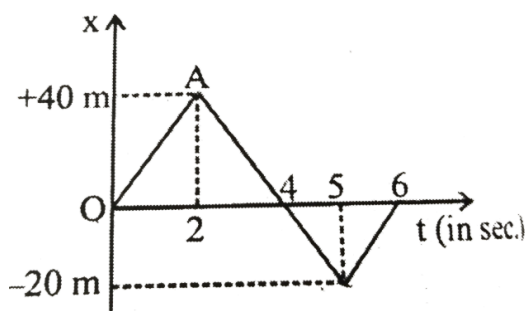
(vii) The least count of the following ammeter is



- a) $1 \mu A$ b) $4 \mu A$ c) $2 \mu A$ d) $20 \mu A$

(viii) Position -time graph of a body is given below. Its distance and displacement are:

- a) 60 m, 20 m b) +40 m, -20 m c) 120 m, 0 m d) 120 m, 20m

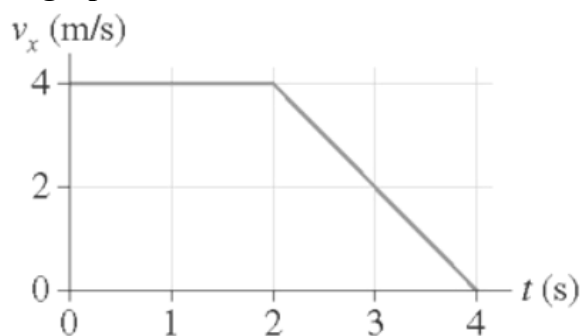


Question 2

i) Complete the following by choosing the correct answers from the bracket: [3]

- If acceleration due to gravity 'g' becomes 4 times, time period will become _____ [double /one fourth /half]
- When a car moves with uniform velocity, its acceleration is _____ positive/negative/zero]
- To mark the main scale and baseline _____ [thimble, ratchet,sleeve] is used in a screw gauge.

ii) A velocity time graph of a car is shown below. Answer the following: [2]



- Draw the acceleration-time graph using the above velocity-time graph.
- How to obtain displacement from the given graph?

Question 3

i) Why is time for 20 oscillations measured to find the time period of a pendulum in the lab? [2]

- ii) A pebble thrown vertically upwards with an initial velocity 44.1 m/s comes to a stop in 4.5 s. Find the retardation. [2]
- iii) a) Name the instrument used to measure the instantaneous speed. [1]
 b) Distinguish between speed and velocity. [1]
 c) It is important to have a time interval small enough to measure the instantaneous velocity. Why? [1]

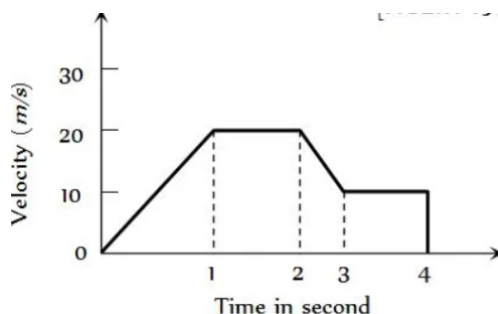
SECTION A
(Attempt all questions.)

Question 4 [3+3+4]

- i) Draw a graph showing the variation of square of time (T^2) with the effective length(l) of a pendulum. What is the slope of this graph at a place? What will be the value of g if the numerical value of slope is 4.
- ii) How to decrease the least count of a screw gauge? Name the screw gauge that is used in optical measurements where a high degree of accuracy is required.
- iii) a) Explain whether the swing moves faster or slower if we stand on a swing?
 b) The length of a simple pendulum increases by 44.4%. Find % increase or decrease in time period.

Question 5 [3+3+4]

- i) A train first travels for 15 min with a velocity 44 km/h and then 30 min with a velocity 30 km/h in the same direction.
 Calculate : a) the total distance travelled b) average velocity of the train.
- ii) A ball starts from a point and moves in a straight line towards a wall that is 30 meters away. It takes 6 minutes to reach the wall. Immediately after hitting the wall, it turns back and returns to the starting point in 3 minutes.
- a) Draw a displacement-time graph for the entire motion.
 b) Draw the distance-time graph for the same.
 c) Find the average speed for the above situation.
- iii) The variation of velocity of a particle with time moving along a straight line is illustrated in the following figure.



- a) displacement in 1 to 2s and 2 to 3 s.
 b) acceleration
 c) retardation