**Name:** **Date:**

| **Areas of Improvement:** |
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| **Maximum Marks** | **34** |
| **Marks Obtained** | |
| **%** | |

| **Parent Signature** | **Parent Signature** |
| --- | --- |
| | |

## Section A [ 0.5 x 16 = 8 ]

**1.** Physical quantities which are expressed only by their magnitude are :

A. Scalar quantities B. Vector quantities C. Tensor quantities D. None of these.

**2**. Which of the following is a scalar quantity?

A. Force B. Time C. Acceleration D. Displacement

**3.** A vector quantity possesses:

A. Direction B. Magnitude C. Both (a) and (b) D. None of these

**4.** A vector quantity is —

A. Work B. Pressure C. Distance D. Velocity

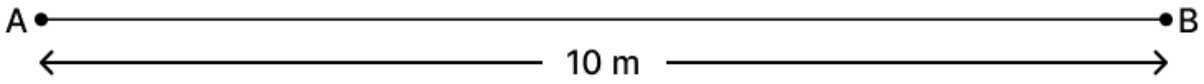
**5.** The motion of a train on a straight track is an example of ..... motion.

A. Two-dimensional B. Three-dimensional C. One dimensional D. All of these

**6.** The S.I. unit of displacement is:

A. Centimetre B. Millimetre C. Decimetre D. Metre

**7.** If a body starts its motion from point A to B and comes back to the same point after a certain time interval, the displacement is:




A. 10 B. 20 C. 0 D. 15

**8.** The motion of a car in a crowded street is an example of:

A. Uniform speed B. Uniform velocity

C. Variable acceleration D. Uniform acceleration

**9.** The distance travelled by a body in 10 s when it travels with a uniform speed of 10 ms-1 is:

A. 100 m B. 1 m C. 20 m D. 50 m

**10.** For a particle in motion, which of the following quantities can be zero at any given instant?

A. Displacement B. Distance C. Speed D. None of these

**11.** The S.I. unit of velocity is —

A. km $h^{-1}$

B. m $min^{-1}$

C. km $min^{-1}$

D. $m\ s^{-1}$

**12.** The unit of retardation is —

1. $m\ s^{-1}$
2. $m\ s^{-2}$
3. m
4. $m\ s^{2}$

**13.** The value of g does not depend on the:

1. Height of the body
2. Mass of the body
3. Shape of the body
4. All of these

**14.** Free fall of a body near the earth's surface is an example of:

A. Uniform acceleration B. Uniform velocity

C. Variable acceleration D. None of these

**15.** The value of g is maximum at:

A. Tropic of Capricorn

B. Equator

C. Tropic of cancer

D. Poles

**16.** A body when projected up with an initial velocity u goes to a maximum height h in time t and then comes back at the point of projection. The correct statement is —

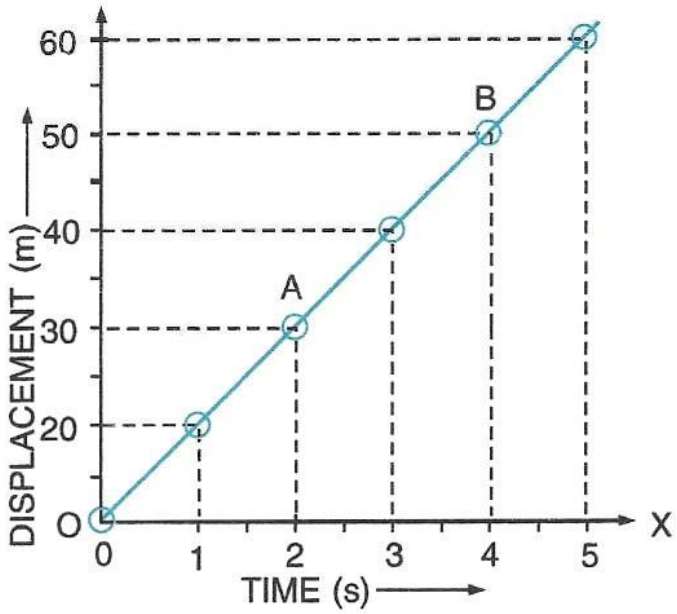
1. The average velocity is 2h/t
2. The acceleration is zero
3. The final velocity on reaching the point of projection is 2u
4. The displacement is zero

## Section B: [ 1 x 14 = 14 ]

**1.** The slope of the displacement-time graph gives:

A. Velocity B. Acceleration C. Speed D. Displacement

**2.** From the given displacement-time graph, answer the following questions:




(i) The kind of motion depicted in this graph is :

1. uniform
2. non-uniform
3. retardation
4. all of the above

(ii) The velocity between points A and C is:

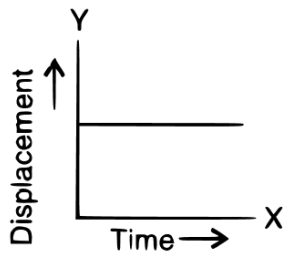
1. 20 $ms^{-1}$
2. 5 $ms^{-1}$
3. 10 $ms^{-1}$
4. 15 $ms^{-1}$

(iii) The displacement at t = 3s is:

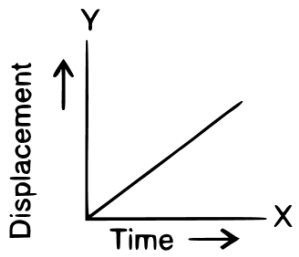
1. 15 $m/s^2$
2. 12.5 $m/s^2$
3. 40 m
4. 30 m

**3.** Out of the following, the correct displacement-time graph for uniform motion is:

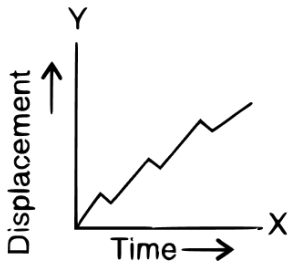
(a)



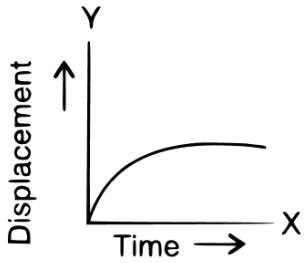

(b)




(c)




(d)




**Answer**: The correct displacement-time graph for uniform motion is:

**4.** From the velocity-time graph, we can determine :

A. The displacement of the body in a certain time interval.

B. The acceleration of the body at any instance.

C. Both (a) and (b)

D. None of these

**5.** Velocity x time = :

A. Average velocity B. Displacement C. Acceleration D. Speed

**6.** The velocity-time graph of a body in motion is a straight line inclined to the time axis. The correct statement is —

A. velocity is uniform

B. acceleration is uniform

C. both velocity and acceleration are uniform

D. neither velocity nor acceleration is uniform.

**7.** For a uniformly retarded motion, the velocity-time graph is:

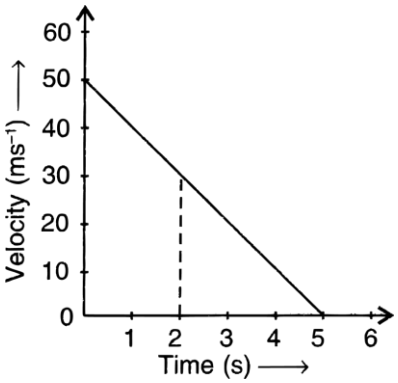
A. a curve

B. a straight line parallel to the time axis

C. a straight line perpendicular to the time axis

D. a straight line inclined to the time axis.

**8.** Study the velocity-time graph shown below and answer the questions that follow:




(i) The distance travelled in 5s:

**1.** 10 m

**2.** 50 m

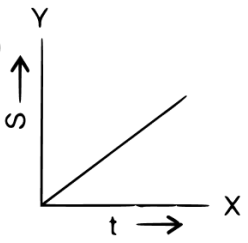
**3.** 125 m

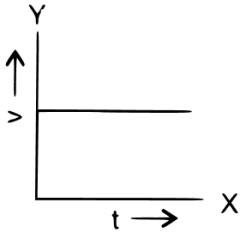
**4.** 250 m

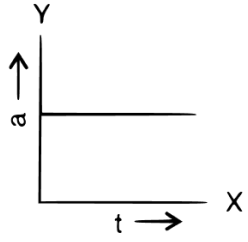
(ii) The retardation of the body as calculated from the graph is:

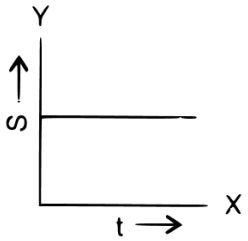
1. 12 $ms^{-2}$
2. 15 $ms^{-2}$
3. 10 $ms^{-2}$
4. 20 $ms^{-2}$

**9.** The graph representing the state of rest of an object is :

(1)


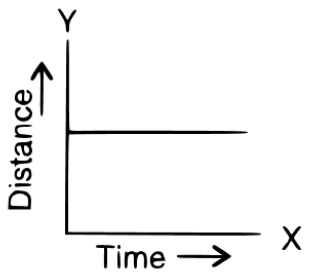

(2)



(3)


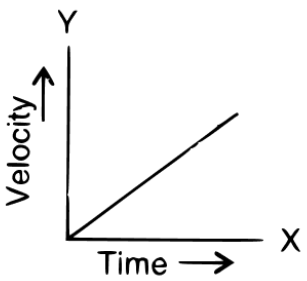

(4)


**10.** Which of the following graphs shown below represents the uniform motion of an object?

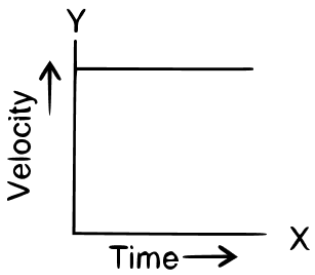
(1)



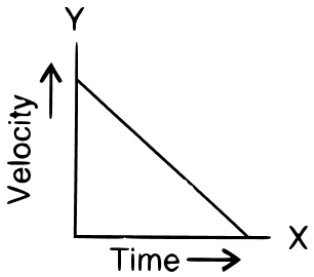

(2)



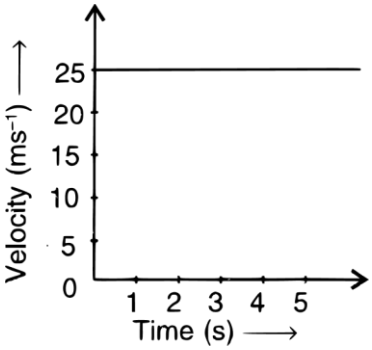

(3)




(4)




**11.** The velocity-time graph given below shows:




A. Uniform acceleration

B. Average speed

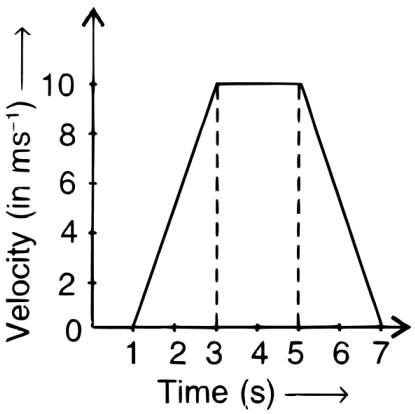
C. Uniform velocity

D. All of these

**12.** The slope of the velocity-tme graph gives :

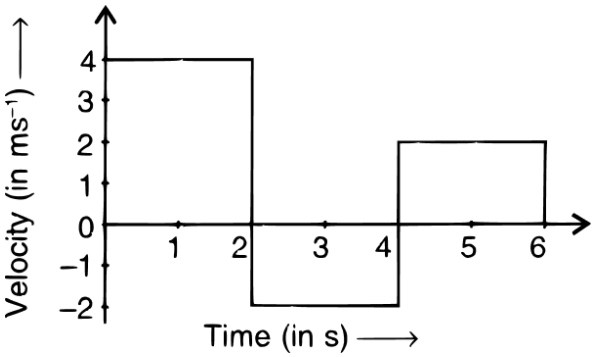
A. Displacement B. Speed C. Distance D. Acceleration

**13.** In the velocity-time graph shown below, the ratio of the distance travelled by the object in the last 2 s and the distance travelled in 7 s is :




1. $\frac{1}{2}$
2. $\frac{1}{4}$
3. $\frac{1}{3}$
4. $\frac{2}{3}$

**14.** The velocity-time graph given below shows an object moving in a straight line. The displacement and the distance travelled by the object in 6 s will respectively be :




1. 8 m, 16 m
2. 16 m, 8 m
3. 16 m, 16 m
4. 8 m, 8 m

## Numerical: [ 2 x 6 = 12 ]

1. The following table gives the displacement of a car at different instants of time.

| Time (s) | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Displacement (m) | 0 | 5 | 10 | 15 | 20 |

(a) Draw the displacement-time sketch and find the average velocity of car.

(b) What will be the displacement of a car at (i) 2.5 s and (ii) 4.5 s ?

**2.** A ball moves on a smooth floor in a straight line with a uniform velocity of 10 m $s^{-1}$ for 6 s. At t = 6 s, the ball hits a wall and comes back along the same line to the starting point with the same speed. Draw the velocity-time graph and use it to find the total distance travelled by the ball and its displacement.

**3**. A body starts from rest with a uniform acceleration of 8 $ms^{-2}$, then the distance covered by the body in 2 s is:

A. 4 m B. 16 m C. 20 m D. 32 m

**4.** A car starting from rest accelerates uniformly to acquire a speed 20 km $h^{-1}$ in 30 min. The distance travelled by car in this time interval will be —

A. 600 km B. 5 km C. 6 km D. 10 km

**5. A body, initially at rest, starts moving with a constant acceleration 2 m $s^{-2}$.**

Calculate —

(i) the velocity acquired and

(ii) and the distance travelled in 5 s.

**6.** A bullet initially moving with a velocity of 20 m $s^{-1}$ strikes a target and comes to rest after penetrating a distance of 10 cm in the target. Calculate the retardation caused by the target.