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1. Read the chapter from TextBook
2. Word list:

Word	Meaning
Variable	changing, modifiable
Uniform	stability
Inevitably	certainly
Acceleration	expedition

Quantities

s = displacement/distance

h = altitude from ground

u = initial velocity

v = final velocity

t = time

a = acceleration

g = acceleration due to gravity

Unit

m

m

ms^{-1}

ms^{-1}

second

ms^{-2}

ms^{-2}

Formulae:

$$a = \frac{v-u}{t};$$

$$v = u + at ;$$

$$s = ut + \frac{1}{2}at^2;$$

$$v^2 = u^2 + 2as;$$

$$s = vt;$$

$$s = \left(\frac{v+u}{2}\right)t;$$

Short Questions:

1. What is called distance and displacement, speed, velocity?

Ans. Follow a book.

2. Velocity is changing but speed is not changing. Is it possible? Show it.

Ans. It is possible. It can happen in any circular motion. For example, when a hand of clock rotates its speed does not change. But its direction is always changing. As, velocity is a vector quantity, it is also changing due to the change of direction.

One word Answered Questions:

1. What is the unit of acceleration?

Ans. ms^{-2}

2. In the annual sports in his school, Karim completed one cycle around a circular path of radius 30 m. What will be his displacement?

Ans. 0 m

3. A train started to move with a uniform acceleration of 20 ms^{-2} from rest position. What will be the velocity while crossing a post at a distance of 250 m?

Ans. 100 ms^{-1}

4. Initial velocity of a car moving with 1.5 m/s^2 acceleration is 20 ms^{-1} . What is its velocity after 4 sec?

Ans. 26 ms^{-1}

5. The velocity of an object is 20 ms^{-1} after 5 seconds of its start from rest. How much distance will it travel in the next 10 seconds?

Ans. 400 m

6 What is the unit of displacement?

Ans. Meter

7. The difference between the initial and final position is called what?

Ans. Displacement

Questions:

1) Explain the acceleration of an object moving with uniform velocity.

Ans. The rate of change of velocity along with each unit of time is called acceleration. If the body moves with a uniform velocity, it clearly indicates that no change takes place in velocity. So, acceleration is zero.

Symbolically, $v - u = 0$

i.e. $v = u$

also, $a = \frac{(v-u)}{t} = 0$

2: An object of mass m is moving with an acceleration a . Its initial velocity is u , final velocity v and the distance traveled in time t is s . The state of motion of the object is given in the table:

No of event	$u \text{ (m/s)}$	$v \text{ (m/s)}$	$t \text{ (s)}$	$s \text{ (m)}$	$a(\text{m/s}^2)$
1	10	30	5	-	-
2	5	20	4	44	3

a) Define acceleration.

b) Calculate the value of s for event no. (1) in the table.

Ans. a) Acceleration: The rate of change of velocity with time that is the change of velocity in unit time is known as acceleration.

c) From table, event - 1,

Initial velocity, $u = 10 \text{ ms}^{-1}$

Final velocity, $v = 30 \text{ ms}^{-1}$

time, $t = 5 \text{ s}$

We know that,

$$\begin{aligned} s &= \frac{u+v}{2} \times t \\ &= \frac{10+30}{2} \times 5 \\ &= 100 \text{ m (Ans.)} \end{aligned}$$

Group work: Students will make a poster presentation on graphs of equations of motion.

Individual work: Students will solve a few math problems .