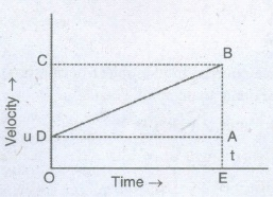
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Answers Key:

Problems

IV. ANSWER THE FOLLOWING

1. 

Graph shows the change in velocity with time for an uniformly accelerated object. The object starts from the point 'D' in the graph with velocity 'u'. lts velocity keeps increasing and after time 't' it reaches the point 'B'.on the graph.
The initial velocity of the object = u = OD = EA.
The final velocity of the object = v = OC = EB
Time = t = OE = DA
Also from the graph we know that, AB = DC
First equation of motion:
By definition, acceleration = change in velocity / time
= (final velocity - initial velocity)/ time
= (OC - OD) / OE
= DC / OE
a =DC / t
DC = AB = at
From the graph EB = EA + AB
v = u + at ... (1)
This is first equation of motion.
Second equation of motion:
From the graph the distance covered by the object during time t is given by the area of quadrangle DOEB.
s = area of the quadrangle DOEB
= area of the rectangle DOEA + area of the triangle DAB
= (AE x OE) + (1/2 x AB x DA)
$s = ut + 1/2\ at^2$ ... (2)
This is second equation of motion.
Third equation of motion:
From the graph the distance covered by the object during time t is given by the area of the quadrangle DOEB. Here DOEB is a trapezium. Then
S = area of trapezium DOEB
= 1/2 x sum of length of parallel side x distance between parallel sides
= 1/2 x (OD + BE) x OE
S = 1/2 x (u + v) x t
since a = (v - u) / t or t = (v - u) / a.
Therefore s = 1/2 x (v + u) x (v - u) / a
$2as = v^2 - u^2$
$v^2 = u^2 + 2\ as$ .....(3)
This is third equation of motion.

2. Motion can be classified in the following types.
i) Linear motion - Where the object moves along a straight line.
ii) Circular motion - Where the object moves along a circular path
iii) Oscillatory motion - Where an object describes a repetitive to and fro movement retracing its original path.
iv) Uniform motion - Where an object travels equal distance in equal intervals of time.
v) Random motion - Where the motion of the object does not fall in any of the categories.

III. ANSWER THE FOLLOWING (ANY 3) COMPULSORY 16

3.

Distance	Displacement
(1) The actual length of the path travelled by a moving body.	The change in position of a moving body in a particular direction.
(2) It is a scalar quantity.	It is a vector quantity.

4.

Speed	Velocity
1. It is the rate of change of distance.	It is the rate of change of displacement
2. It is a scalar quantity.	It is a vector quantity.

5. When an object moves with constant speed along a circular path the motion is called uniform circular motion.
   Examples:
   I . Revolution of earth around the sun.
   2. Revolution of moon around the earth.

Fill in the blanks

I. CHOOSE THE CORRECT ANSWER

6. (b) 

7. (b) displacement covered by the moving object
8. (c) Motion of a racing car on a circular track.
9. (b) The force of reaction of centripetal force

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