

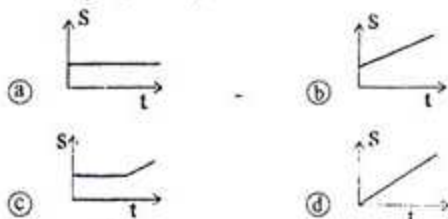
Chapter-2: Motion

1. What is the dimension of ut in the equation, $S = ut + \frac{1}{2}at^2$? [All Board-18]

$\frac{1}{2}at^2$? [All Board-18]

- (a) LT^{-3} (b) LT^{-2}
(c) L (d) 0

2. Which of the following graphs indicates uniform velocity? [D.B.-17]



3. 54 km h^{-1} equals to which of the following? [D.B.-17]

- (a) 12 ms^{-1} (b) 15 ms^{-1}
(c) 20 ms^{-1} (d) 25 ms^{-1}

4. Which one of the following is a scalar quantity? [R.B.2017]

- (a) Force (b) Acceleration
(c) Velocity (d) Work

5. At which altitude the value of 'g' is standard at sea level? [C.B.-17]

- (a) 30° (b) 45°
(c) 60° (d) 90°

6. Which does play vital role for safe journey? [C.B.-17]

- (a) Mass (b) Weight
(c) Speed (d) Friction

7. Which of the following is scalar quantity? [Ctg.B.-17]

- (a) Electric Intensity (b) Acceleration
(c) Weight (d) Pressure

8. What is the type of motion of piston in a cylinder of petrol engine? [Ctg.B.-17]

- (a) Linear motion (b) Circular motion
(c) Rectilinear motion (d) Periodic motion

9. The velocity of sound in air is 340 ms^{-1} and time to hear an each is 1.5s. What is the distance between source and reflector? [S.B.-17]

- (a) 250 m (b) 255 m
(c) 260 m (d) 265 m

10. Who gave the laws of falling bodies? [S.B.-17]

- (a) Dr. Gilbert (b) Galileo
(c) Newton (d) James Watt

11. Which of the following are vector quantities? [J.B.-17]

- (a) Work and displacement
(b) Energy and power
(c) Time and velocity
(d) Force and electric intensity

12. Which equation of the following is correct? [J.B.-17]

- (a) $G = \frac{gM}{R^2}$ (b) $2S = ut + vt$
(c) $h = \frac{u^2 - v^2}{2g}$ (d) $S = \frac{v + u}{2t}$

13. A body is released freely from rest, what times will be the velocity if four times displacement takes place? [B.B.-17]

- (a) $\frac{1}{4}$ (b) $\frac{1}{2}$
(c) 2 (d) 4

14. A motor cycle having velocity of 54 km h^{-1} is accelerated for 5 seconds and final velocity rises up to 35 ms^{-1} . What was the acceleration in ms^{-2} ? [D.B.-16]

- (a) 5 (b) 4

- (c) -4 (d) -5

15. Which of the following is correct in terms of falling bodies? [Dj.B.-16]

- (a) $t \propto h^2$ (b) $h \propto t^2$

- (c) $h \propto \frac{1}{t^2}$ (d) $h \propto \frac{1}{t}$

16. A body from a place moved 4m directly towards the east and then travelled 3m towards the north. What will be the difference between the distance and displacement of the body in metre? [Dj.B.-16]

- (a) 7 (b) 5

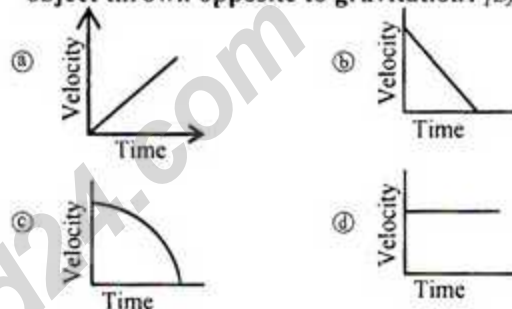
- (c) 2 (d) 1

17. The brake was drawn to stop a car running at the speed of 60 kmph. What will be the kinetic energy of the car in joule if the mass of it is 5000 kg? [Dj.B.-16]

- (a) 6.94×10^5 (b) 5.94×10^5

- (c) 5.5×10^6 (d) 6.37×10^6

18. Which figure below does represent the motion of an object thrown opposite to gravitation? [Dj.B.-16]



19. A body of mass 10 kg was moving with a velocity 2 ms^{-1} . After applying force, 2 ms^{-2} acceleration is created. After 2sec, what will be the change of momentum? [C.B.-16]

- (a) 0 kg ms^{-1} (b) 20 kg ms^{-1}

- (c) 40 kg ms^{-1} (d) 60 kg ms^{-1}

20. In which place weight of a body is maximum? [Ctg.B.-16]

- (a) In equatorial region (b) In polar region

- (c) At sea level (d) At the center of earth

21. Two persons of mass 50 kg and 100 kg are moving with a velocity of 4 ms^{-1} and 2 ms^{-1} respectively. Which one is correct for them? [Ctg.B.-16]

- (a) Kinetic energy of 1st person is two times than that of 2nd person

- (b) Kinetic energy of 1st person is half of the kinetic energy of 2nd person

- (c) Kinetic energy of 2nd person is 4 times than that of 1st person

- (d) Both of them are having equal kinetic energy

22. Which relation is correct? (in which normal symbols are used) [Ctg.B.-16]

- (a) $t \propto h^2$ (b) $G = g \cdot R^2/M$

- (c) $v = g + ut$ (d) $a = (v + u)/t$

23. Velocity of a car is 10 ms^{-1} if it creates retardation of 2 ms^{-2} , then what will be the velocity after 3s? [Ctg.B.-16]

- (a) 60 ms^{-1} (b) 16 ms^{-1}

- (c) 4 ms^{-1} (d) 0.25 ms^{-1}

24. Which one is related to Newton's 1st Law of motion? [S.B.-16]

- (a) $v = u + at$ (b) $u = v$

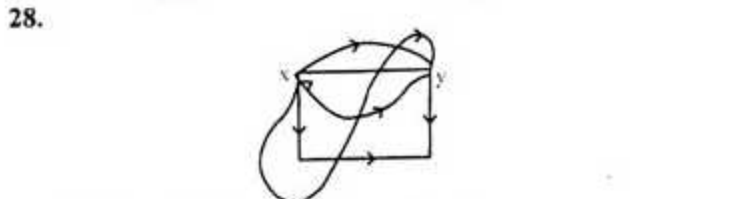
- (c) $s = vt$ (d) $F = ma$

25. If a freely falling body covers 72 m in 6s, what distance it will cover in 3s? [S.B.-16]

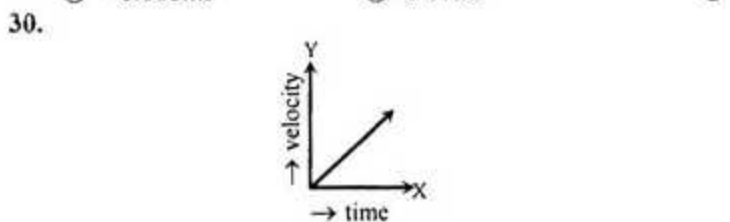
- (a) 36 m (b) 24 m

- (c) 18 m (d) 8 m

26. The velocity of an object A decreases uniformly from 15ms^{-1} to 5ms^{-1} within 3 seconds. What is the acceleration in this case? [J.B.-16]
- (a) 3.3ms^{-2} (b) 3.33ms^{-2}
 (c) -6.678ms^{-2} (d) -3.33ms^{-2} **(d)**
27. Which one of the following is equation of g? [J.B.-16]
- (a) $g = \frac{GM}{R}$ (b) $g = \frac{GM}{R^2}$
 (c) $g = \frac{R}{GM}$ (d) $g = \frac{R^2}{GM}$ **(b)**

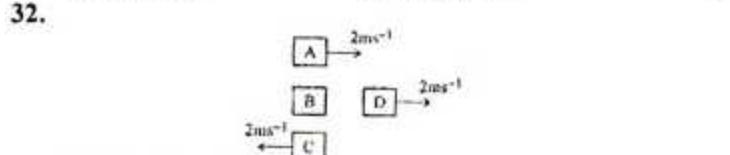


- In figure the linear distance of xy is — [J.B.-16]
- (a) value of acceleration (b) value of displacement
 (c) value of speed (d) value of distance **(d)**
29. A bullet of mass 10gm was shot from a gun with a velocity of 400ms^{-1} . If the mass of the gun is $1\frac{1}{2}\text{kg}$, then what is the backward velocity? [J.B.-16]
- (a) 2.67ms^{-1} (b) 6.67ms^{-1}
 (c) -6.688ms^{-1} (d) -2.67ms^{-1} **(b)**



- According to the above picture, the object is going with — [B.B.-16]
- (a) Uniform acceleration (b) Non-uniform acceleration
 (c) Uniform velocity (d) Non-uniform velocity **(a)**

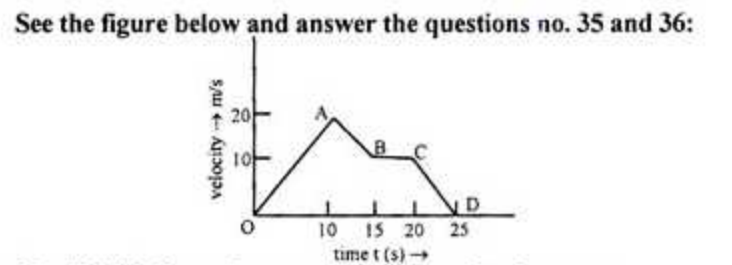
31. For a body moving with uniform acceleration starting from rest — [S.B.-17]
- i. velocity is proportional to time
 ii. velocity is proportional to distance
 iii. the distance travelled is proportional to the square of the time
- Which one is correct?
- (a) i and ii (b) i and iii
 (c) ii and iii (d) i, ii and iii **(d)**



- In the above incidence — [B.B.-17]
- i. A is static with respect to D
 ii. B is moving with uniform velocity with respect to D
 iii. the velocity of C is maximum with respect to D
- Which one is correct
- (a) i and ii (b) ii and iii
 (c) i and iii (d) i, ii and iii **(d)**

33. Freely falling of all bodies — [D.B.-16]
- i. go down equal distance at equal time
 ii. reach at the earth in various time
 iii. distance travelled is directly proportional to square of the time
- Which one is correct?

- (a) i and ii (b) i and iii
 (c) ii and iii (d) i, ii and iii **(b)**
34. What is meant by the speed of a body 18ms^{-1} ? The body travels — [C.B.-16]
- i. 18 m in 1s
 ii. 36 m in 2s
 iii. 54 m in 3s
- Which one is correct?
- (a) i & ii (b) i & iii
 (c) ii & iii (d) i, ii & iii **(d)**

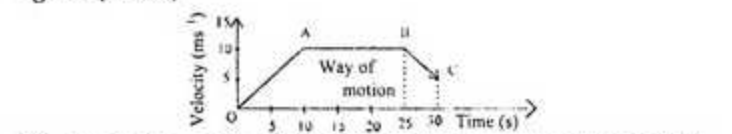


35. Which line refers to zero acceleration? [R.B.-16]
- (a) OA (b) AB
 (c) BC (d) CD **(c)**
36. Lines are referring to — [R.B.-16]
- i. the acceleration of OA is 2ms^{-2}
 ii. the acceleration of AB and CD are equal
 iii. the distance of BC is 50m
- Which one is correct?
- (a) i and ii (b) i and iii
 (c) ii and iii (d) i, ii and iii **(d)**

Answer to the following question no. 37 and 38 according

37. What is the kinetic energy of the object at point 'A'? [D.J.B.-17]
- (a) 10J (b) 20J (c) 30J (d) 40J **(b)**
38. For the object — [D.J.B.-17]
- i. velocity is uniform ii. acceleration is uniform
 iii. applied force is uniform
- Which one is correct?
- (a) i and ii (b) i and iii
 (c) ii and iii (d) i, ii and iii **(d)**
- [N.B.: Correct answer : (i)]

Answer the questions no. 39 and 40 according to given figure: [S.B.-17]



39. In which part of the graph is the car moving with uniform velocity? [S.B.-17]
- (a) OA (b) AB (c) BC (d) AO and BC **(b)**
40. If the mass of the car is 600 kg, then what will be the opposing force in the portion BC of the stem? [S.B.-17]
- (a) 0 N (b) 100 N
 (c) 600 N (d) 1200 N **(c)**

Based on the stem given below answer questions No. 41 and 42 :

- 3N and 2N force is applied on a body of mass 5kg in the same direction and at the same time. And after 2sec, these forces are released. [C.B.-16]
41. What is the acceleration?
- (a) 1ms^{-2} (b) 1.67ms^{-2}
 (c) 2.5ms^{-2} (d) 25ms^{-2} **(a)**
42. After 3 sec, which one is correct?
- (a) Acceleration will decrease
 (b) Momentum will decrease
 (c) Velocity will remain same
 (d) Body will be stopped **(c)**