SMART TEST SERIES

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Name:		Subject:	Physics-11
Roll # :		Unit(s):	3,
Class:	Inter Part-I	Test:	Type 8 - Short Test (No Choice) - Marks=30
Date:		Time:	

Q.1 Circle the Correct Answers. (5x1=5)

1 If a mass of a body is doubled, then acceleration becomes.
(A) double (B) half (C) one fourth (D) constant

2 Mark the correct relation:
(A) $a = \frac{v_f - v_i}{t}$ (B) $a = \frac{v_f^2 - v_i^2}{2s}$ (C) $a = \frac{2(S - v_i t)}{t^2}$ (D) all of them

3 When a bullet of mass m is fired from a gun of mass M with velocity v then velocity of the gun will be:
(A) $V' = -\frac{mv}{t}$ (B) $V' = -\frac{Mv}{t}$ (C) $V' = -mvt$ (D) $V' = -\frac{mv}{M}$

4 If the momentum of a body is numerically equal to its kinetic energy, then speed of body is:
(A) 1 ms^{-1} (B) 2 ms^{-1} (C) 4 ms^{-1} (D) 8 ms^{-1}

5 Height of projectile is maximum at an angle of:
(A) 45° (B) 60° (C) 30° (D) 90°

Q.2 Write short answers of the following questions. (8x2=16)

(i) Explain the circumstances in which the velocity $\vec{v}$ and acceleration $\vec{a}$ of a car: (a) $\vec{v}$ is zero but $\vec{a}$ is not zero. (b) $\vec{a}$ is zero but $\vec{v}$ is not zero

(ii) Write two objectives of velocity time graph.

(iii) State Newton's Second and Third Law of Motion.

(iv) State Newton's second law of motion and define the unit of force.

(v) What is meant by projectile motion? Write range of the projectile?

(vi) A height point in the path of a projectile its speed is minumum, why? Explain it.

(vii) Why Ballistics Missiles are not useful for long ranges?

(viii) Show that range of projectile is maximum when thrown at an angle of 45° with horizontal.

NOTE: Attempt the long question. (5+4=9)

3(a) Define elastic collision in one dimension. Show that relative velocities before collision = relative velocities after collision.

(b) A SLBM (submarine launched ballistic missile) is fired from a distance of 3000 km. If the Earth is considered flat and the angle of launch is 45° with horizontal, find the velocity with which the missile is fired and the time taken by SLBM to hit the target.