SET A: Answer the following questions (8×2=16)

1. What do you understand by uniform motion?

2. Explain how acceleration changes with the change of velocity?

3. Define the horizontal range of a body.

4. Describe the meaning of equation $L = I\omega$.

5. Explain the law of conservation of momentum.

6. Write a short note about "Torque". Define simple harmonic motion.

7. Show that the moment of inertia of a rigid body moving with uniform velocity is equal to its angular momentum.

8. Demonstrate that sound wave is longitudinal wave.

SET B: Answer the following questions (3×3=9)

9. A bullet after penetrating 30mm of a wall loss half of its speed. How far will the bullet penetrate the wall afterwards?

10. At what velocity and angle of projection a projectile is to be projected to make its horizontal 80 m and the time of flight 5s?

11. If displacement $X = A \sin\omega t$, calculate the velocity and acceleration. Draw the corresponding graph for displacement, velocity and acceleration.

Hope for the Best