

CLASS IX
PHYSICS – SA1

1. Define the following terms

- a) Rest
- b) Motion
- c) Distance
- d) Displacement
- e) speed
- f) velocity
- g) Acceleration

2. Differences between

- a) Speed and velocity
- b) Uniform and Non-uniform speed
- c) Uniform and Non-uniform velocity
- d) Uniform acceleration and non-uniform acceleration

3. Define Uniform circular motion

4. What do you mean by the term retardation? Give an example

5. Describe the distance-time graph for

- a) Body at rest
- b) Body moving with uniform velocity
- c) Body moving with variable velocity

6. Derive the equation of motion for velocity-time retardation

$$V = u + at$$

7. Derive the equation of motion for position-time relation

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

8. Derive graphically the position-velocity equation of motion $v^2 - u^2 = 2as$

9. A ball is dropped from a height of 50m. If its velocity increases uniformly at the rate of 10m/sec^2

- a) With what velocity will it strike the ground?
- b) After what time will it strike the ground?

10. A car accelerating uniformly from 15m/sec to 20m/sec in 8 sec. calculate

- a) its acceleration
- b) The distance covered by the car in that time.

11. Define the following terms

- a) Force
- b) Balanced forces.
- c) Unbalanced forces.
- d) Inertia
- e) Inertia of rest
- f) inertia of motion
- g) inertia of direction
- h) momentum

12. State the various effects produced by the force.

13. Define friction

14. State Newton's three laws of motion

15. Explain the relationship between mass and inertia
16. calculate the force required to produce an acceleration of 7 m/sec^2 in a body of mass 85 kg.
17. State the law of conservation of momentum.