

CHAPTER – 2 – KINEMATICS**I. 2 Marks Questions:**

1. What is frame of reference?
2. Write the difference between a scalar and a vector.
3. What is meant by position vector?
4. Write the difference between distance and displacement.
5. Define momentum and write its component form.
6. Define one Radian.
7. Write the equation of rotational motion.

II. 3 Marks Questions:

1. Explain the types of motion with examples.
2. What are the three Dimensions of motion? Give example for each
3. What are the different types of vectors?
4. Write a note on (i) Average speed (ii) Instantaneous velocity (iii) Average velocity
5. Write a note on relative velocity in one dimension and two dimensions.
6. Write a note on (i) Average acceleration (ii) Instantaneous acceleration
7. Define (i) Angular Displacement (ii) Angular velocity
8. Derive the relation between linear acceleration and angular acceleration
9. Derive the relation between linear velocity and angular velocity

III. 5 Mark Questions:

1. Explain triangular law of addition and subtraction.
2. What is scalar product of two vectors? Write any five properties of scalar product.
3. What is vector product of two vectors? Write any five properties of vector product.
4. Derive the equations of motion of uniformly accelerated bodies.
5. Derive the equations of motion of a body freely falling from a height h
6. Show that the path of the projectile is a parabola in case of horizontal projection.
7. Derive equations for (i) Time of Flight (ii) Resultant velocity of a body at any instant of time (iii) Horizontal range and (iv) speed of projectile when it hits the ground in case of horizontal projection.
8. Show that the path of the projectile is a parabola in case of oblique projection.
9. Derive equations for (i) Time of Flight (ii) Horizontal range and (iii) Maximum height attained by the projectile in case of oblique projection.
10. Derive an expression for centripetal acceleration.