

Worksheet: System of Particles and Rotational Motion

Maharashtra State Board · Class 11 · Physics · 5 questions · 16 marks

Name: _____

Date: _____

Score: _____ / 16

Q1. Masses 2 kg and 3 kg are at (1,0) and (4,0) m. Find the centre of mass. [2 marks]

Q2. A disc has $I = \frac{1}{2}MR^2$ about its central perpendicular axis. Find I about a parallel axis at the rim. [3 marks]

Q3. A torque of 10 N m acts on a body with $I = 5 \text{ kg m}^2$ for 4 s from rest. Find the angular velocity attained. [3 marks]

Q4. A diver with $I = 15 \text{ kg m}^2$ spins at 3 rad/s tucked, then straightens to $I = 25 \text{ kg m}^2$. Find the new angular velocity. [3 marks]

Q5. A solid sphere rolls down a 10 m high incline. Find its speed at the bottom ($g = 10 \text{ m/s}^2$). [5 marks]
