PHYSICS:

1. A body of mass 1000 kg has a velocity of 6 m/s. If an extra 2000 kg mass is embedded in it, then what will be the velocity of the combined mass?

Answer. 5m/s

2. If the electron revolves in the 3rd Bohr's orbit of the Hydrogen sphere and has a radius R, then what will be its radius in the 4th orbit in terms of R?

Answer. 16R/9

3. A wire of length L and resistance R is cut into 5 equal parts and those parts are connected in parallel, then R_{eq} across it will be will be equivalent to?

Answer. R/25

4. 4 objects of mass 1 kg are kept on vertices of a square of side 2 metres and an axis is passing perpendicular to the plane through one of the vertices, then calculate the Moment of Inertia about this axis.

Answer. 16 Kg-m^2

5. Two infinite current-carrying wires having current *I* in opposite directions are present 20 cm away from each other. Find the magnetic field in S.I units at the midpoint P.

Answer. $(10\mu_0 I)/ \pi$

6. If the diameter of the earth becomes half while keeping mass constant, then the acceleration due to gravity at the surface of the earth becomes?

Answer. Twice

7. Two masses m_1 = 4 gm and m_2 = 25 gm have the same kinetic energy, then find the ratio of linear momentum.

Answer. 2:5

8. A charge $Q=10^{-6}C$ is placed at the origin. Find the potential difference between two points A and B whose position vectors are (√3i + √3j) m and √6j respectively.

Answer. Zero