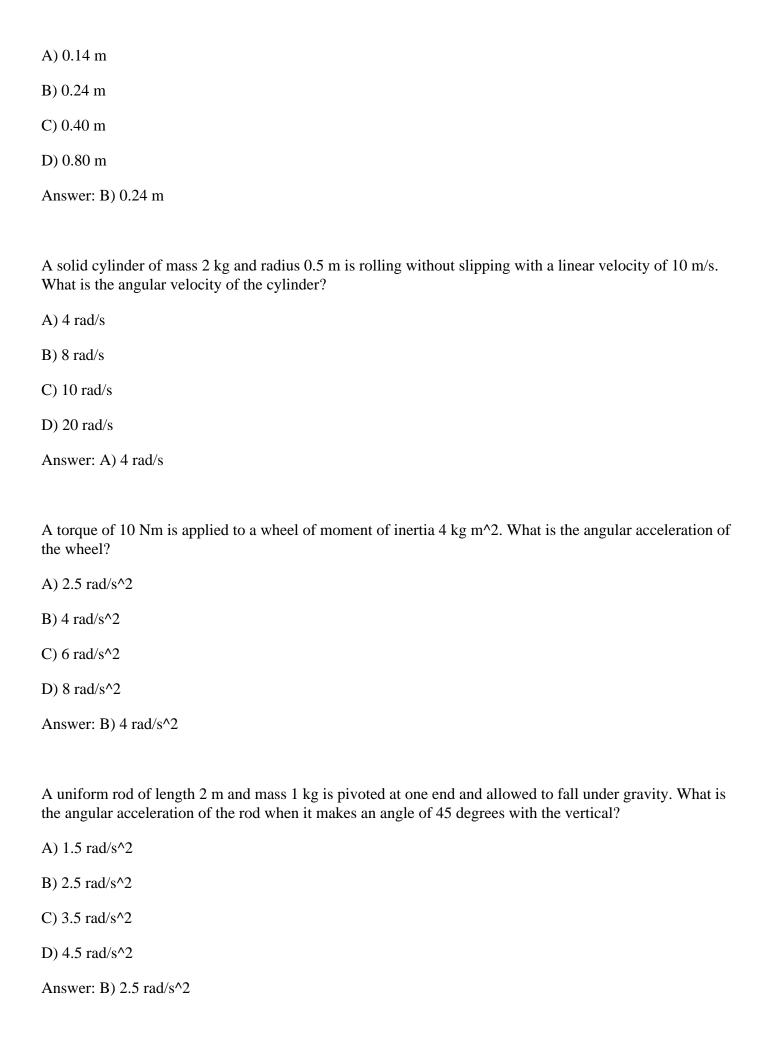
10 Lecture - PHY101

Important Mcqs

A disk of radius 0.5 m is rotating with a constant angular velocity of 10 rad/s. What is the linear speed of a point on the circumference of the disk?
A) 5 m/s
B) 10 m/s
C) 15 m/s
D) 20 m/s
Answer: C) 15 m/s
A solid sphere is rolling down an incline without slipping. What is the ratio of the translational kinetic energy to the rotational kinetic energy?
A) 1:1
B) 3:2
C) 2:3
D) 5:7
Answer: C) 2:3
A 1 kg mass is attached to a rod of length 0.5 m and is rotated in a horizontal plane about one end of the rod. If the angular velocity of the mass is 4 rad/s, what is the centripetal force acting on the mass?
A) 4 N
B) 8 N
C) 12 N
D) 16 N
Answer: B) 8 N

A point on the rim of a wheel of radius 0.4 m moves through an angle of 60 degrees. What is the distance travelled by the point?



A solid sphere of radius 0.3 m and mass 5 kg is rotating about its diameter with an angular velocity of 6 rad/s. What is the kinetic energy of the sphere?
A) 54 J
B) 108 J
C) 162 J
D) 216 J
Answer: B) 108 J
A thin hoop of mass 2 kg and radius 0.5 m is rolling down an incline without slipping. What is the velocity of the hoop when it reaches the bottom of the incline?
A) 3.3 m/s
B) 6.6 m/s
C) 9.9 m/s
D) 13.2 m/s
Answer: A) 3.3 m/s
A flywheel of moment of inertia 5 kg m^2 is rotating about its axis with an angular velocity of 10 rad