CLASS: XI	INDIAN SCHOOL MUSCAT FIRST PERIODIC TEST MARKING SCHEME	SUBJECT: PHYSICS
	SET - B	
Q.NO.	VALUE POINTS	SPLIT UP MARKS
1.	Monet of inertia of a body about any axis in its plane and parallel to an axis passing through the centre of mass of the body is equal to its moment of inertia about an axis passing through the centre of mass of the body plus the product of the mass of the body and square of the distance between the two axes.	1M
2.	w = 8 rad s^{-1}, v = rw =0.5 X 8 = $4ms^{-1}$, L = mvr L = $0.8Kgm^2s^{-1}$	1M
3.	When the page is turned, it rotates about the bound end of the book. By applying the force at right angle to the farthest end of the page of the page, maximum torque is produced. Thus the page can be turned easily even on applying a small force.	1M
4.	Torque	1M
5.	The inner layers of the whirl wind in a tornado are closer to the axis of rotation. It means, the moment of inertia of the air molecules of inner layers is small. Hence, according to the law of conservation of angular momentum, the angular speed of the whirl wind In a tornado is very high.	1M
6.	$I=(m_1+m_2+m_3)r^2=(1+2+3)\times(1\sqrt{3})^2=2kgm^2$	2M
7.	The principle of moments states that, when an object is in equilibrium, the sum of anticlockwise moments about any point equals the sum of clockwise moments about the same point. The moment of a force about any point is defined as the force x perpendicular distance from the line of action of the force to the point - moment = F x d $F_1d_1 = F_2d_2$ or $W_1d_1 = W_2d_2$, where W is weight.	1M 1M
8.	Derivation for the relation between the angular momentum and moment of inertia. L = IW	2M
9.	V´=V/64 So the radius r´of the shrunk earth is r´= r/4 from the principle of conservation of angular momentum I´ω´＝Iω	1M 2M

	$\omega' = I\omega / I' = (r/r')^2 X\ \omega = 16\omega$ here I means moment of inertia $(I' = 2M(r'^2)/5,\ I = 2M(r^2)/5)$ T: Duration of the day T=24hours $T' = 2\pi/\omega' = 2\pi/16\omega = T/16$ =1.5hours	
10.	Definition of M.I. SI unit: Kgm^2 ($M^1L^2T^0$) Any two factors	1M 1M 1M
11.	Derivation for total kinetic energy of rolling body: $E_k = ½ mv^2(1 + I/mr^2)$ Total Kinetic energy of rolling solid sphere: $E_k = 7/10\ mv^2$	2M 1M