Physics - ICS Part 1 Physics Chapter 5 Short Questions Test

Q1. State the direction of the following vectors in simple situation:
A) Angular Momentum B) Angular Velocity

Ans 1: The direction of angular momentum and angular velocity can be determined by right hand rule;
"Grasp the axis of rotation in right hand with the figures curling in the direction of rotation, then the erect thumb will give the direction of angular velocity and angular momentum."

Q2. What is mean by angular momentum?

Ans 1:

Q3. What are geostationary orbit and geostationary satellites?

Ans 1: Geostationary Orbit: An orbit in which the time period of satellite is equal to the time period of spin motion of the earth is called geostationary orbit.

Geostationary Satellites: A satellite whose orbital motion is stationary along the earth is called geostationary satellite.

Q4. How is artificial gravity created?

Ans 1: Artificial gravity is the gravity like effect produced in an orbiting spaceship to overcome weightlessness.To create artificial gravity the spaceship is set into rotation around its own axis. The astronaut then is presses towards the outer rim and exerts a force on the floor of the spaceship in much the same way as on the earth.

Q5. What is meant by centripetal force?Write down its formula

Ans 1:

Q6. Why is the axis of rotation of Earth remains fixed in one direction with respect to the universe around it?

Ans 1: The major force acting on Earth is the pull of the Sun and no other sizeable toque is experienced by it. The Earth's axis of rotation, therefore remains fixed in one direction with reference to the universe around us.

Q7. Why banked tracks are needed for turns?

Ans 1: Banked tracks are needed because friction alone cannot provide energy for centripetal force.
If the road is banked, so that the outer edge is above the inner edge, then a portion of the normal force from the road on the tyre

points towards the center of the track; this fraction of the normal force can provide enough centripetal force to keep the car moving in a circle.

Q8. State the law of conversation of angular momentum.

Ans 1:

Q9. Define Moment of Inertia.Write its formula.

Ans 1: The property of the body to resist any change in its state of rest or uniform angular velocity is called moment of inertia. For a point mass 'm'situated at a distance 'r' from the axis of rotation , the moment of inertia 'I' is given by ; $I=mr^2$
Significance;
Moment of inertia plays the same role in angular motion as that of mass plays in linear motion. It is also called measure of rotational inertia in angular motion.Moment of inertia determines the angular acceleration while mass determines the linear acceleration.

Q10. What is meant by INTEL SAT? At what frequencies the INELSAT-VI operates ?

Ans 1: The largest satellite system managed by 126 countries is international. Telecommunication Satellite Organization (INTELSAT).
The INELSAT-VI operates at microwaves frequencies of 4, 6, 11 and 14 Ghz.
