Physics - FSC Part 1 Physics Chapter 5 Short Questions Preparation

Q1. Define angular displacement and write its S.I unit.

Ans 1:

Q2. Why Einstein views of gravitation are preferred than Newton's views of gravitation? Explain briefly

Ans 1: Newton discovered the inverse square law of gravity. Einstein's theory also says that gravity follows an inverse square law (except in strong gravitational fields), but it gives us a physical picture of how gravity works. The bending of star light caused by the gravity of the Sun was measured during a solar eclipse in 1919, it was found to match Einstein's Prediction rather than Newton's.

Q3. Explain why earth's satellite despite of being freely falling object does not reach the earth.

Ans 1: To orbit the planet and not come crashing down, a spacecraft has to travel forward (tangential to Earth) fast enough that it compensates for the fall downwards. The trajectory of its fall has the same curvature as earth's surface. So it will never reach the earth.

Q4. An object orbiting around the earth in said to be a freely falling body. Why?

Ans 1: An object in orbits is said to be freely falling , because the trajectory of its fall has the same curvature as Earth's surface. In fact, the object is falling towards the center of earth but because of spherical shape of earth, it never reaches the surface of earth.

Q5. Explain conservation of direction of angular momentum.

Ans 1: The direction of angular momentum along the axis of rotation remains fixed. This is due to the fact that the axis of rotation of an object will not change its orientation unless an external torque causes it to do so .

Q6. Define angular momentum and give its dimension.

Ans 1:

Q7. What is meant by centripetal force? Write down its formula.

Ans 1:

Q8. 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."

Q9. When mud files off the tyre of a moving bicycle, I what direction does it fly?

Ans 1: Adhesive force between mud and tire is weal. When the mud files off the tyre of a moving bicycle, it always files along the tangent to the tyre. Because linear velocity is always tangent to the circle.

Q10. Explain the difference between tangential velocity and angular velocity.

Ans 1: The linear velocity of a particle moving along a curve or circle is called tangential velocity. Its direction is always along the tangent to the circle.
The rate of change of angular displacement is called angular velocity.The direction of angular velocity is along the axis of rotation of the body by right hand rule. V= rw

---