

## Physics - FSC Part 1 Physics Chapter 5 Short Questions Preparation

Q1. What is meant by moment of inertia? Explain its significance.

**Ans 1:** The product of mass of the particle and square of its perpendicular distance from the axis of rotation is called the moment of inertia.

$$I = mr^2$$

The moment of inertia plays the same role in angular motion as the mass in linear motion.

Q2. What are Artificial Satellites and how they move around the earth?

**Ans 1:** Satellites are the objects that orbit around the earth. They are put into orbit by rockets and are held in orbits by the gravitational pull of the earth.

Q3. Why you wear seat belts?

**Ans 1:** During collision, the passengers move forward towards the windscreen due to inertia. The seat belt prevents the passenger from moving forward. And lessened the chances of injury.

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 pressed towards the outer rim and exerts a force on the floor of the spaceship in much the same way as on the earth.

Q5. 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.  $V = r\omega$

Q6. Why the microwaves are used in satellite communication?

**Ans 1:** Micro waves are used in satellite communication because they travel in a narrow beam, in a straight line and pass easily through the atmosphere of the earth.

Q7. What is mean by angular momentum?

**Ans 1:**

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Q8. State the law of conservation of angular momentum.

**Ans 1:**

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Q9. What are Artificial Satellites?

**Ans 1:** Artificial Satellites are the man-made objects that orbit around the Earth.

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Q10. What is meant by centripetal force? Write down its formula.

**Ans 1:**

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