

Class 10 Physics – Quick Notes

Chapter: Force

1. Force

Force is a push or pull which can change the shape, size, direction or speed of an object.

2. Effects of Force

- 1 Change in shape or size of a body
- 2 Change in speed of a moving body
- 3 Change in direction of motion
- 4 Bring a moving body to rest or set a body in motion

3. Contact and Non-Contact Forces

Contact Forces: Forces that act only when bodies are in contact (e.g., Friction, Muscular force).

Non-Contact Forces: Forces that act from a distance (e.g., Gravitational, Magnetic, Electrostatic).

4. Newton's First Law of Motion

A body remains at rest or in uniform motion unless acted upon by an external unbalanced force.

5. Momentum

Momentum (p) is the product of mass and velocity.

Formula: $p = m \times v$

6. Newton's Second Law of Motion

The rate of change of momentum is directly proportional to the applied force.

Formula: $F = m \times a$

7. Newton's Third Law of Motion

For every action, there is an equal and opposite reaction.

8. Balanced and Unbalanced Forces

Balanced Forces: Do not change the state of motion.

Unbalanced Forces: Cause change in motion or shape.

9. Key Exam Points

- 1 Force is a vector quantity
- 2 Momentum depends on both mass and velocity
- 3 Action and reaction act on different bodies

4 Net force determines acceleration