

Forces and Motion Fundamentals

Physics · Answer Key · 18 Questions

1. What is the study of forces and motion called?

- A) Thermodynamics
- B) Optics
- C) Mechanics**
- D) Electromagnetism

2. According to Newton's First Law of Motion, an object at rest will:

- A) Start moving
- B) Change its velocity
- C) Remain at rest**
- D) Accelerate indefinitely

3. Newton's Second Law of Motion states that the acceleration of an object is directly proportional to the net force acting on it and inversely proportional to its:

- A) Mass**
- B) Velocity
- C) Momentum
- D) Friction

4. What is the unit of force in the International System of Units (SI)?

- A) Joule
- B) Watt
- C) Newton**
- D) Pascal

5. Which of Newton's Laws describes the concept of action-reaction?

- A) First Law
- B) Second Law
- C) Third Law**
- D) Law of Universal Gravitation

6. Friction is a force that opposes motion between two surfaces in contact. What type of friction occurs when an object is sliding?

- A) Static friction
- B) Rolling friction
- C) Fluid friction
- D) Kinetic friction**

7. What is the tendency of an object to resist changes in its state of motion?

- A) Velocity
- B) Acceleration
- C) Inertia**
- D) Momentum

8. If the net force acting on an object is zero, what can be said about its acceleration?

- A) It is maximum
- B) It is zero**
- C) It is constant but not zero
- D) It is unpredictable

9. What force pulls objects towards the center of the Earth?

- A) Friction
- B) Tension
- C) Gravity**
- D) Normal force

10. When an object is at rest on a horizontal surface, the normal force is equal in magnitude and opposite in direction to:

- A) The applied force
- B) The friction force
- C) The gravitational force**
- D) The net force

11. What is the rate of change of velocity called?

- A) Speed
- B) Distance
- C) Acceleration**
- D) Displacement

12. A push or a pull is defined as a:

- A) Mass
- B) Energy
- C) Force**
- D) Work

13. In the equation $F=ma$, 'F' represents the:

- A) Mass
- B) Acceleration
- C) Net force**
- D) Velocity

14. What is the SI unit of mass?

- A) Gram
- B) Kilogram**
- C) Pound
- D) Ounce

15. When an object is moving at a constant velocity, the net force acting on it is:

- A) Positive
- B) Negative
- C) Zero**
- D) Infinite

16. What is the force exerted by a rope or string called?

- A) Normal force
- B) Friction
- C) Tension**
- D) Weight

17. What type of force acts perpendicular to a surface?

- A) Gravitational force
- B) Applied force
- C) Normal force**
- D) Frictional force

18. Which of the following is a non-contact force?

- A) Friction
- B) Tension
- C) Magnetic force**
- D) Normal force