

CBSE TEST PAPER-01
CLASS - IX Science
Forces and Laws of Motion

1. What is the S.I. unit of momentum?

- (a) Kg ms. (b) ms / Kg (c) Kg ms⁻¹ (d) Kg / ms

[1]

2. What is the numerical formula for force?

- (a) $F = ma$ (b) $F = m/a$ (c) $F = ma^2$ (d) $F = a^2m$

[1]

3. If the initial velocity is zero then the force acting is :-

- (a) Retarding (b) Acceleration (c) Both (d) None

[1]

4. What is the S.I. unit of force.

- (a) Kg m/s² (b) Kg m/s (c) Kg m²/s² (d) Kg m²s

[1]

5. Newton's first law of motion is also called:-

- (a) Law of Inertia (b) Law of Momentum (c) Law of Action & Reaction (d) None of these

[1]

6. State Newton's second law of motion?

[2]

7. What is the momentum of a body of mass 200g moving with a velocity of 15 m/s.

[2]

8. Define force and what are the various types of forces?

[2]

9. A force of 25 N acts on a mass of 500g resting on a frictionless surface. What is the acceleration produced?

[2]

10. A force of 15 N acts for 5s on a body of mass 5Kg which is initially at rest. Calculate.

- a) final velocity of the body b) the displacement of the body

[3]

11. Differentiate between mass and weight?

[3]

12. A scooter is moving with a velocity of 20m/s when brakes are applied. The mass of the scooter and the rider is 180Kg. the constant force applied by the brakes is 500N.

a) How long should the brakes be applied to make the scooter comes to a halt?

b) How far does the scooter travel before it comes to rest?

[3]

13. State Newton's third law of motion and how does it explain the walking of man on the ground?

[3]

Or, *Explain, why is it difficult for a fireman to hold a hose, which ejects large amounts of water at a high velocity.*

14. A stone is dropped from a 100m high tower. How long does it take to fall?

- a) the first 50m and b) the second 50m.

[5]

OR, *State and prove "Law of the conservation of Momentum"*