

FORCE AND LAWS OF MOTION
MULTIPLE CHOICE QUESTIONS

- Q.1: If a bus starts suddenly, the passengers in the bus will tend to fall
- (a) In the direction opposite to the direction of motion of bus.
 - (b) In the same direction as the direction of motion of bus.
 - (c) Sideways.
 - (d) None of the above.
- Q.2: An athlete runs some distance before taking a long jump because
- (a) He gains energy to take him through long distance.
 - (b) It helps him to apply large force.
 - (c) By running action and reaction forces increase.
 - (d) By running the athlete gives himself larger inertia of motion.
- Q.3: A rider on a horseback falls back when horse starts running all of a sudden because
- (a) Rider is taken back.
 - (b) Rider is suddenly afraid of falling.
 - (c) Inertia of rest keeps the upper part of body at rest
whereas the lower part of the body moves forward with the horse.
 - (d) None of the above.
- Q.4: Inertia is a property of a body by virtue of which the body is
- (a) Unable to change by itself the state of rest.
 - (b) Unable to change by itself the state of uniform motion in a straight line.
 - (c) Unable to change by itself the direction of motion.
 - (d) Unable to change by itself the state of rest or uniform motion
in a straight line.
- Q.5: Qualitative definition of force is given by
- (a) Newton's first law of motion.
 - (b) Newton's second law of motion.
 - (c) Newton's third law of motion.
 - (d) Newton's law of gravitation.
- Q.6: SI unit of force is
- (a) kg m/s.
 - (b) Newton.
 - (c) Dyne.
 - (d) None of these.
- Q.7: A driver accelerates his car first at the rate of 1.8 m/s^2 and then at the rate of 1.2 m/s^2 . The ratio of the two forces exerted by the engine in the two cases will be
- (a) 1: 2
 - (b) 2: 1
 - (c) 2: 3
 - (d) 3: 2
- Q.8: Newton's law of motion gives the measure of
- (a) Force
 - (b) Acceleration

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(c) Momentum

(d) Impulse.

- Q.9: An object will continue to accelerate until
- (a) The resultant force begins to decrease.
 - (b) The resultant force on it is zero.
 - (c) The velocity changes direction.
 - (d) The resultant force on it is increased continuously.
- Q.10: A canon after firing recoils due to
- (a) Conservation of energy.
 - (b) Backward thrust of gases.
 - (c) Newton's third law of motion.
 - (d) Newton's first law of motion.
- Q.11: A rocket or jet engine works on the principle of
- (a) Conservation of energy
 - (b) Conservation of momentum
 - (c) Conservation of mass
 - (d) Newton's second law of motion.
- Q.12: kg.m/s^2 is the unit of
- (a) Momentum
 - (b) Speed
 - (c) Acceleration
 - (d) Force
- Q.13: Rate of change of momentum is equal to
- (a) Acceleration
 - (b) Work done
 - (c) Force
 - (d) Impulse
- Q.14: When an object undergoes acceleration
- (a) Its speed always increases
 - (b) Its velocity always increases.
 - (c) It always falls towards the earth
 - (d) A force always acts on it.
- Q.15: When a net force acts on an object, the object will be accelerated in the direction of the force with acceleration proportional to
- (a) The force on the object
 - (b) The velocity of the object
 - (c) The mass of the object
 - (d) The inertia of the object
- Q.16: The action and reaction forces referred to in the third law
- (a) Must act on the same object.
 - (b) May act on different objects.
 - (c) Must act on different objects.
 - (d) Need not be equal in magnitude but must have the same direction.
- Ans: 1 - a. 2 - d. 3 - c. 4 - d. 5 - a. 6 - b. 7 - d. 8 - a. 9 - b. 10 - c.
11 - b. 12 - d. 13 - c. 14 - d. 15 - a. 16 - c.