

- (Q.) What happen when two force acts in opposite direction on an object?** (1 Mark)
- (Ans) If two forces acts in the opposite direction on an object, then that object will move in the direction of resultant force. The resultant or net force is equal to the difference between the two forces.
- (Q.) What is a force?** (1 Mark)
- (Ans) A push or a pull activity on an object, which can change the shape, size, speed of an object and direction of motion of the moving object is called force.
- (Q.) What is a spring force?** (1 Mark)
- (Ans) The spring force is the force exerted by a compressed or stretched spring upon any object which is attached to it.
- (Q.) Define the push force with its effect.** (1 Mark)
- (Ans) Push is the press on an object that can change the shape and direction of motion of an object.
- (Q.) Define pull force and write its effects.** (1 Mark)
- (Ans) The force applied to drag an object towards oneself is called pull force. It can change the shape and direction of motion of an object.
- (Q.) Define contact force.** (1 Mark)
- (Ans) A contact force is a force which acts between two objects that are in contact with each other. Muscular force and frictional force are examples of contact force.
- (Q.) Define muscular force.** (1 Mark)
- (Ans) The force exerted on an object due to the action of muscles of the body is known as the muscular force. The lifting up of bucket of water through hands, kicking up of a football through legs, hitting a ball through bat by a batsman, etc are the examples of muscular force.
- (Q.) Define frictional force.** (1 Mark)
- (Ans) When there is relative motion between two surfaces, there is always a resistance to the motion. This is the force of friction. Thus, friction always has its direction opposite to the direction of motion.
- (Q.) Explain the term 'non-contact forces'.** (1 Mark)
- (Ans) Non-contact force is any force that is applied to an object (or body) by another body which are not in direct contact with each other. For example : magnetic force, gravitational force, electrostatic force, etc.
- (Q.) What is gravitational force?** (1 Mark)
- (Ans) Every object in the universe, whether small or large, exerts an attraction force on every other object. This force is known as the gravitational force.
- (Q.) What is pressure?** (1 Mark)
- (Ans) The force acting per unit area of a surface is called pressure.
Mathematically , Pressure = force / area.

- (Q.) Define atmospheric pressure.** (1 Mark)
- (Ans) The pressure exerted by atmosphere is known as atmospheric pressure.
- (Q.) Define the term 'gravity'.** (1 Mark)
- (Ans) Earth pulls every objects toward itself. This force is called force of gravity, or simply gravity.
It is attractive in nature.
- (Q.) What happens when we press a rubber ball placed on a table?** (1 Mark)
- (Ans) When a force is applied on a rubber ball, force changes its shape.
- (Q.) How does the force of friction arises?** (1 Mark)
- (Ans) The force of friction arises when one surface moves or tries to move over another surface due to which the contact between surfaces is created. It is an example of a contact force. It acts in the direction opposite to the direction of motion of an object.
- (Q.) Ram drags his little sister towards himself away from a mad dog. What did Ram apply - pull or push?** (1 Mark)
- (Ans) Ram applied pull.
- (Q.) Which device is used to measure the weight of a body?** (1 Mark)
- (Ans) A spring balance is a device which is used to measure the weight of a body.
- (Q.) Define the weight of a body. Also, write its S.I. unit.** (1 Mark)
- (Ans) Weight of a body is the force exerted by the gravitational field on a body, such as force exerted by earth's gravitational field. Weight of a body = mass of a body acceleration due to gravity. Its S.I. unit is Kg m/s² or Newton (N).
- (Q.) What are the five effects of force?** (2 Marks)
- (Ans) The effect of force are as follows:
1. It can change the direction of a body inmotion.
 2. It can increase the speed of a body inmotion.
 3. It can decrease the speed of a body in motion.
 4. It can stopa moving object.
 5. It canset a stationary object move.

(Q.) What do you mean by the force of friction? How can it be minimised? (3 Marks)

(Ans) Frictional force is a force, which always opposes the motion of a body over a given surface. Whenever a body actually moves over a surface, frictional force appears in a direction opposite to the direction of motion of the body and this opposite force tries to oppose the motion of body. By using the lubricants on surfaces and by polishing a rough surface, we can reduce the friction.

(Q.) Why is the moon's force of gravity less than that of the earth? (3 Marks)

(Ans) Gravitational force depends on the masses of the two bodies concerned. Earth's mass is much greater than that of the moon. That's why the earth's force of gravitation is much greater than that of the moon.

(Q.) Mention three types of forces which can act from a distance. (3 Marks)

(Ans) Three types of forces which can act from a distance are :

1. Magnetic force.
2. Electrostatic force.
3. Gravitational force.

(Q.) Mention three disadvantages of friction between the parts of a machine. How does (a) oiling and (b) usage of ball bearings help to reduce friction? (5 Marks)

(Ans) Three disadvantages of friction between the parts of a machine are:

1. It wastes energy.
2. It wears out the rubbing surfaces of the machine parts.
3. It causes heating.

Engineers always try to reduce friction. Two ways of reducing friction are oiling and using ball bearings or roller bearings.

By oiling: It prevents direct contact between the surfaces by forming a film between them. Due to this, the surfaces move easily.

By using ball bearings: Ball bearings come in many shapes and sizes and are used to reduce friction especially when a rod rotates inside a hole, as in a bicycle wheel. They are used between the wheel hub and the axles of bicycle due to which the friction reduces considerably. Most of the time, they are used in the machine having moving parts.

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