

QUESTION BANK
CHAPTER - FORCE AND PRESSURE

MCQ

1. Which of the following statements are false about force?
 - a) Force applied on an object need not be in the same direction.
 - b) No interaction of objects is required for a force to come into play
 - c) Motion imparted to objects will be due to the action of a force
 - d) The strength of a force is usually expressed by its magnitude.
2. The force which comes into play when one body slides over another body is called-
 - a) mechanical force
 - b) electrostatic force
 - c) frictional force
 - d) gravitational force
3. When two forces applied on an object are equal and opposite, then the net force-
 - a) may move the object.
 - b) change the shape of the object and move the object
 - c) may stop a moving object
 - d) do not move the object but may cause a change in its shape.
4. Which of the following is an example of a contact force?
 - a) Magnetic force
 - b) Muscular force
 - c) Electrostatic force
 - d) Gravitational force

PARAGRAPH BASED

During the monsoon, if oil spills on the road, it creates dangerous conditions for speeding vehicles. Speeding vehicles skid when they pass over the mixture of oil and water. To avoid such accidents, sand must be spread on the oil spill.

Answer the following questions based on above information:

- (i) Which force is mentioned in the above paragraph?
 - a) Muscular force
 - b) Gravitational force
 - c) Frictional force
 - d) Electrostatic force
- (ii) Why sand must be spread on the oil spill?
 - a) It increases the irregularities
 - b) It decreases the irregularities
 - c) No change on the surface
 - d) Sand makes the surface smooth
- (iii) Why do speeding vehicles skid when they pass over the mixture of oil and water?
- (iv) What measures must be followed by the drivers in monsoon?

ASSERTION-REASONING

Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

- i) Both A and R are true, and R is correct explanation of the assertion.
- ii) Both A and R are true, but R is not the correct explanation of the assertion.
- iii) A is true but R is false.
- iv) A is false but R is true.

1. Assertion- A ball falling towards the earth accelerates.

Reason- The ball was thrown with more force.

2. Assertion- If you apply oil on the metal surface the friction will increase.

Reason- Friction increases with increase in the irregularities.

SA (3 MARKS)

1. Describe an activity to show that 'a force can change the state of motion'.
2. a) Why the nose of some people start bleeding at higher altitudes?
b) Why do deep sea divers or high-altitude fliers wear special suit?
c) Why cutting instruments are often sharpened?
3. What are the effects of application of force on an object?
4. How is pressure related to force and area? Write the S.I. unit of Pressure.
5. a) Two persons are applying forces on two opposite sides of a moving cart. The cart still moves with the same speed in the same direction. What do you infer about the magnitudes and direction of the forces applied?
b) A man is pushing a cart down a slope. Suddenly the cart starts moving faster and he wants to slow it down. What should he do?
c) While sieving grains, small pieces fall. Which force pulls them down?
6. a) The body of a dolphin and bird is streamlined. Why?
b) A rocket is fired upward on the *Diwali* night. Name the two forces acting on the rocket immediately after firing.
c) Porters place a round piece of cloth on their head when they carry heavy loads. Why?

LA (5 MARKS)

1. a) Write an activity to show that liquids exert pressure on the walls of the container. (draw diagram)
b) An archer shoots an arrow in the air horizontally. However, after moving some distance, the arrow falls to the ground. Name the initial force that sets the arrow in motion. Explain why the arrow ultimately falls.
2. a) What is atmospheric pressure? Why its effect is not felt?
b) Why do you think a ball rolling along the ground gradually slows down and comes to rest?
c) Write two points of difference between force and pressure.
3. Identify the forces that come into play in the following cases. Also state the type of force- contact force or non-contact force.
 - a) Jumping on the floor
 - b) The moon keeps on moving around the earth.
 - c) Car stops on applying brakes
 - d) Attraction between magnets and iron fillings.
 - e) A balloon rubbed with synthetic cloth sticks to the wall.
4. What do you understand by the term “net force” ? Calculate the net force in the following situations. Also mention the direction in which the object will move.
 - a) Arun and Shyam moving a heavy wooden block. Arun is applying 700 N force and Shyam is applying 800 N force in the same direction of Arun.
 - b) In a tug of war, two teams exert forces of 40 N and 50 N respectively.
5. a) What do you understand by the term pressure? Write its SI unit.
b) How is pressure related to force?
c) Give reason for the following:
 - i) It is easier to move with flat shoes in sand rather than pointed heels.
 - ii) Divers wear special suits when diving into deep sea.
 - iii) The tools meant for cutting and piercing always have sharp edges
6. a) Explain with the help of an activity that liquids exert equal pressure at the same depth (draw diagram).
b) Why is it easier to slide over fresh snow with skis?
c) Why are the rear wheels in a truck broader as compared to the front wheels?