

1. Give two examples each of situations in which you push or pull to change the state of motion of objects

Sol. (a) If a rubber ball or marble is placed on a very smooth surface and given a small push, it starts moving with some speed.
 (b) If a child is placed on a hanging swing in the state of rest and the swing is pulled again and again by a rope, the swing will move to and fro with a speed.

2. Give two examples of situations in which applied force causes a change in the shape of an object.

Sol. (i) If an inflated balloon is taken and pressed from two sides with hand, its shape get changed.
 (ii) If a plate of steel is beaten up with a hammer the shape of the plate will get change.

3. Fill in the blanks in the following statements.

(a) To draw water from a well we have to _____ at the rope.
 (b) A charged body _____ an uncharged body towards it.
 (c) To move a loaded trolley we have to _____ it.
 (d) The north pole of a magnet _____ the north pole of another magnet.

Sol. (a) To draw water from a well we have to pull at the rope.
 (b) A charged body attracts an uncharged body towards it.
 (c) To move a loaded trolley we have to pull it.
 (d) The north pole of a magnet repels the north pole of another magnet.

4. An archer stretches her bow while taking aim at the target. She then releases the arrow, which begins to move towards the target. Based on this information fill up the gaps in the following statements using the following terms:

muscular, contact, non-contact, gravity, friction, shape, attraction

(a) To stretch the bow, the archer applies a force that causes a change in its _____
 (b) The force applied by the archer to stretch the bow is an example of _____ force.
 (c) The type of force responsible for a change in the state of motion of the arrow is an example of a _____ force.
 (d) While the arrow moves towards its target, the forces acting on it are due to _____ and that due to _____ of air.

- Sol.** (a) shape (b) muscular
(c) contact (d) gravity, friction.

5. In the following situations identify the agent exerting the force and the object on which it acts. State the effect of the force in each case.
- Squeezing a piece of lemon between the fingers to extract its juice.
 - Taking out paste from a toothpaste tube.
 - A load suspended from a spring while its other end is on a hook fixed to a wall
 - An athlete making a high jump to clear the bar at a certain height.

Sol.

	<i>Agents exerting force</i>	<i>Object on which force acts.</i>	<i>Effect of force</i>
(a)	Fingers	Lemon	Lemon juice is extracted
(b)	Fingers	Toothpaste tube	Toothpastes comes out
(c)	A load	Spring	The spring expands
(d)	An athlete	On the legs	Cleans the height

6. A blacksmith hammers a hot piece of iron while making a tool. How does the force due to hammering affect the piece of iron?

Sol. The shape of the hot piece of iron changes. It flattens and becomes thinner than earlier. This is the effect of force due to hammering the piece of iron.

7. An inflated balloon was pressed against a wall after it has been rubbed with a piece of synthetic cloth. It was found that the balloon sticks to the wall. What force might be responsible for the attraction between the balloon and the wall?

Sol. This is an electrostatic force.

8. Name the forces acting on a plastic bucket containing water held above ground level in your hand. Discuss why the forces acting on the bucket do not bring a change in its state of motion.

Sol. The forces that act on the bucket are as follows:

- The pressure of water contained in it, exerted on its wall and on base of the bucket.
- Force of gravity by earth.
- The water is contained in a bucket and the pressure of force is exerted on the wall of the bucket, which is sufficient to take it as a force. As the bucket is held in my hand, so I overcome the force of gravity

of the earth. That is why these forces do not bring a change in the state of motion.

9. A rocket has been fired upwards to launch a satellite in its orbit. Name the two forces acting on the rocket immediately after leaving the launching pad.

Sol. The two forces that are acting on the rocket immediately after leaving the launching pad are:

- (a) Force of gravity of earth acting downward, and
- (b) The frictional force produced by air particles.

10. When we press the bulb of a dropper with its nozzle kept in water, air in the dropper is seen to escape in the form of bubbles. Once we release the pressure on the bulb, water gets filled in the dropper. The rise of water in the dropper is due to

- (a) pressure of water
- (b) gravity of the earth
- (c) shape of rubber bulb
- (d) atmospheric pressure

Sol. (d) Atmospheric pressure.

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NCERT TEXTUAL EXERCISE (SOLVED)