NCERT solution for Force and Pressure

Question 1

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

Answer

Two examples of push force are as follows:
1) A big box at rest is pushed to move it from one place to another. This changes the state of motion of the box.
2) A player pushes a ball using his hockey stick. This changes the state of motion of the ball.

Two examples of pull force are as follows:
1) Rope is pulled to draw water from a well. This changes the state of motion of the water bucket.
2) A suitcase is pulled from alimirah

Question 2

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

Answer

1) Making of bread from dough
2) Hammer hitting on red hot iron.

Question 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.

Answer

(a) pull
(b) attracts
(c) push or pull
(d) repels

Question 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.

Answer

(a) shape.

(b) muscular
(c) contact
(d) gravity, friction

Question 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.

(a) Squeezing a piece of lemon between the fingers to extract its juice.

(b) Taking out paste from a toothpaste tube.

(c) A load suspended from a spring while its other end is on a hook fixed to a wall.

(d) An athlete making a high jump to clear the bar at a certain height.

Answer

S.no	Situation	Agent exerting the force	Object on which force acts	Effect of force
a)	Squeezing a piece of lemon between the fingers to extract its juice	Fingers	Lemon	Change in shape of lemon
b)	Taking out paste from a toothpaste tube.	Fingers	toothpaste tube	Change in shape of toothpaste tube
c)	A load suspended from a spring while its other end is on a hook fixed to a wall.	Load	Spring	Change in shape of spring
d)	An athlete making a high jump to clear the bar at a certain height.	Muscles of Athlete	Athlete	Change of state of motion of athlete

Question 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?

Answer

The force due to hammering changes the shape of the piece of iron

Question 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?

Answer

Electrostatic force is responsible for the attraction between the balloon and the wall.

Question 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.

Answer

There are two forces acting on plastic bucket
a) Muscular force is acting in upward direction
b) The force of gravity is acting in downward direction.
Now Both forces are acting in opposite directions to each other and hence cancel the effect of each other. Due to this, there is no change in the state of motion of the bucket.

Question 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.

Answer

The two forces acting on the rocket are given below

1) The force of gravity, which pulls the rocket towards the ground
2) The force of friction due to earth's atmosphere, which opposes its motion.

Question 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

Answer

(d) atmospheric pressure