ANSWERS

MCQ

1. b) No objects interaction is required for a force to come into play

2. c) frictional force

3. d) Do not move the object but may cause a change in its shape.

4. b) Muscular force

PARAGRAPH BASED

(i) c) Frictional force

(ii) a) It increases the irregularities

(iii) Oil and water make the surface smooth and decreases the friction between tyre and road

(iv) Drivers should drive slowly, wear helmet in case of driving two-wheelers, wear seat belts in case of four-wheelers, etc.

ASSERTION-REASONING

1. iii) A is true but R is false.

2. iv) A is false but R is true.

SA

1. Take a rubber ball and place it on a level surface such as a tabletop or a concrete floor. Now, gently push the ball along the level surface. Push the ball again while it is still moving. Next place your palm in front of the moving ball. Remove your palm as soon as moving ball touches it. A ball at rest begins to move when a force is applied on it. This shows that force can change the state of motion.

2.a) At higher altitudes the blood pressure inside our body is more than the atmospheric pressure which forces the blood to ooze out from openings like the nose.

b) In order to counter the effect of pressure change deep sea divers or high-altitude fliers wear special suit which provide protection in severe conditions.

c) Area of contact of sharp objects is less, thus less pressure will be required to cut an object.

3. Force may make an object move from rest, may change the speed of an object if it is moving, may change the direction of motion of an object, may bring about a change in the shape of an object, may cause some or all of these effects.

4. Pressure = Force/ area

Pressure is directly proportional to force, the more the force the more the pressure.

Pressure is inversely proportional to area, the more the area the less the pressure

S.I unit of pressure is pascal (Pa).

5. a) Both the forces are of equal magnitudes and applied in the opposite directions.

b) He should apply a force to pull the cart up the slope.

c) Force of gravity.

6.a) The body of a dolphin and bird is streamlined to reduce friction drag as they move through either water or air.

b) Gravitation force and frictional force

c) Porters place a round piece of cloth on their head when they must carry heavy loads, by doing so they increase the area of contact of the load and the head. So, the pressure on their head is reduces and they find it easier to carry the load.

LA

1.a) Activity 11.9 on page no. 139

b) The archer stretches the string of the bow by applying muscular force. In this process the shape of the bow changes. When the string is released, it regains its original position that provides the initial force to set the arrow in motion. The force of gravity that acts on the arrow in the downward direction brings it to the ground

2. a) The pressure exerted by this air is known as atmospheric pressure. The pressure inside our bodies is also equal to the atmospheric pressure a

b) The force responsible for changing the state of motion of the ball is the force of friction

c)

Force	Pressure
1. Force is the push and pulls of an object.	1. Pressure is defined as the force acting per unit area
2. Its SI unit is Newton (N).	2. Its S.I unit is pascal (Pa).

3. a) Muscular force. Contact force.

b) Gravitational force. Non-contact force.

c) Friction. Contact force.

d) Magnetic force. Non- Contact force

e) Electrostatic force. Non-contact force.

4. Net force is the addition or subtraction of magnitude of both the **forces** depending on the direction of the force.

a) Net force =700N + 800 N = 1500N. Wooden block will move in the same direction of application of force by Arun and Shyam.

b) Net force = 50N – 40N = 10 N. The rope will move in the direction where force applied is more i.e. 50N.

5. a) Pressure is defined as the force acting per unit area. S.I unit of pressure is pascal (Pa).

b) Pressure = Force/Area. The more the force the more is the pressure.

c) i) More the area, less will be the pressure.

ii) Deep sea divers will have an atmospheric diving suit which block the heavy pressure of the water around them and keep a decent pressure inside.

iii) Less the area, more will be the pressure.

6. a) Activity 11.10 on page no. 140

b) It is easier to slide over fresh snow with skies because the friction acting on the snow.

c) The rear wheels of a truck are broad compared to front wheels because to increase the surface area and decrease the pressure.