



CLASS VIII: Science
Chapter 9: Friction

Questions and Solutions | Page 121 - NCERT Books

Q1. Fill in the blanks

- (a) Friction opposes the between the surfaces in contact with each other.
- (b) Friction depends on the of surfaces.
- (c) Friction produces
- (d) Sprinkling of powder on the carrom board friction.
- (e) Sliding friction is than the static friction.

Ans. (a) Relative motion (b) Nature (c) Heat (d) Reduces
(e) Less.

Q2. Four children were asked to arrange forces due to rolling, static and sliding frictions in a decreasing order. Their arrangements are given below. Choose the correct arrangement:

- (1) Rolling, static, sliding (2) Rolling, sliding, static
- (3) Static, sliding, rolling (4) Sliding, static, rolling

Ans. (3) Static, sliding, rolling.

Q3. Alida runs her toy car on dry marble floor, wet marble floor, newspaper and towel spread on the floor. The force of friction acting on the car on different surfaces in increasing order will be

- (1) Wet marble floor, dry marble floor, newspaper, towel.
- (2) Newspaper, towel, dry marble floor, wet marble floor.
- (3) Towel, newspaper, dry marble floor, wet marble floor.
- (4) Wet marble floor, dry marble floor, towel, newspaper.

Ans. (1) Wet marble floor, dry marble floor, newspaper, towel

Q4. Suppose your writing desk is tilted a little, a book kept on it starts sliding down. Show the direction of frictional force acting on it.

Ans. The book moves downwards. The frictional force is acting opposite to the movement of book. So it acts upwards.

Q5. You spill a bucket of soapy water on a marble floor accidentally. Would it make it easier or more difficult for you on the floor, Why ?

Ans. The layer of soap makes floor smooth due to which the friction is reduced and the foot cannot make a proper grip on the floor. Therefore it is difficult to walk on a soapy floor and we start to slip on the floor.



Q6. Explain why sportsmen use shoes with spikes.

Ans. Sportsmen use shoes with spike to increase the friction between shoes and surface. The shoes with spike do not slip while they run or play.

Q7. Eqbal has to push a lighter box and Seema has to push a similar heavier box on the same floor. Who will have to apply a larger force and why?

Ans. The heavy object will be pressed hard against the opposite surface and produces more friction. So Seema will have to apply a larger force due to more friction.

Q8. Explain why sliding friction is less than static friction.

Ans. The two sliding objects find less time to get interlocked against each other (objects and irregularities of surface). So they get less friction. Therefore sliding friction is always less than static friction.

Q9. Give examples to show that friction is both a friend and a foe.

Ans. Examples to show that friction is a friend and a foe: **Friction is friend**

- (i) Friction allows us to grip and catch different objects.
- (ii) It helps us to walk comfortably on the surface.
- (iii) It helps to minimise the speed or to stop the moving objects.
- (iv) It helps us to write on paper or blackboard.
- (v) The things do not move from their places due to friction.

Friction is foe

- (i) Friction causes wear and tear in objects.
- (ii) It causes damage the parts of machines.
- (iii) The machines or tools require regular maintenance due to which a lot of money is wasted.
- (iv) It reduces the speed of moving objects so more force is required.
- (v) It does not allow the free movement of objects.

Q10. Explain why objects moving in fluids must have special shapes.

Ans. The object moving in fluids must have a special shape. This type of shape is called streamlined shape. The streamlined shape helps to overcome the friction between objects and fluids. The objects have pointed fronts with little broader middle portion which gets tapered at the back.