Class 8 Ch 12 Friction Eureka Plus Science Exercise Answer

1.Tick (√) the correct options

1. A dolphin swimming in the sea experiences

- ☑ fluid friction.
- ☐ sliding friction.
- ☐ static friction.
- ☐ rolling friction.

2. If a girl sitting halfway on a slide does not slide down, it could be because of

- ☐ gravity.
- ☐ height.
- ☑ friction.
- ☐ weight.

3. The surface on which a toy car pushed with the same force travels the furthest is

- ☐ Bedsheet
- ☑ glass.
- ☐ grass.
- ☐ paper.

4. Applying grease to the hinges of a door

- ☐ increases friction.
- ☑ reduces friction.
- ☐ keeps friction constant.
- ☐ increases the weight.

5. A smooth surface offers

- ☐ no friction.
- ☑ less friction.
- ☐ more friction.
- ☐ more heat.

6. The frictional force exerted by fluids is also called

- motion.
- pressure.
- drag.
- lubricant.

Ans: 1. fluid friction 2. friction 3. glass 4. reduces friction 5. less friction 6. drag

II. Tick (√) the true statements and cross (x) the false ones.

1. Friction is generated when two surfaces rub against each other. (√)

2. A rough surface decreases friction. (x)

3. Every object at rest possesses static friction. (√)

4. A rolling object generally encounters less friction. (√)

5. Grease and oil act as lubricants and reduce friction. (√)

6. Objects moving in fluids have a streamlined body (√)

Ans: 1. ✓ 2 X 3. ✓ 4. ✓ 5. ✓ 6. ✓

III. Answer the following questions in one sentence.

1. What is static friction?

Ans: Friction possessed by an object at rest to resist motion is called static friction.

2. Does friction generate heat

Ans: Yes, friction generates heat.

3. What is fluid friction?

Ans: Friction offered by liquids and gases is called fluid friction or Drag.

4. If you apply oil on a metal surface—would it increase or decrease friction?

Ans: Applying oil on a metal surface will decrease friction.

5. Which of these surfaces offers the least friction—ice, wood or coir mat?

Ans: Ice has least friction.

6. Which of these surfaces offers the maximum friction—tiled floor, wooden floc or coir mat?

Ans: Coir mat offers maximum friction.

7. What type of friction will a table at rest possess?

Ans: A table at rest possesses static friction.

IV. Answer the following questions in two to three sentences.

1. Why do your palms feel warm when you rub them?

Ans: When you rub your palms against each other, it generates some amount of heat due to friction between the palms.

2. Differentiate between rolling and sliding friction.

Ans: When an object rolls, it gives rise to rolling friction, whereas, when an object slides, it gives rise to sliding friction.

3. Why do aircraft have a streamlined shape?

Ans: The streamlined body of an aircraft helps in reducing fluid friction.

4. Can friction be totally eliminated? Give reasons

Ans: No, friction cannot be totally eliminated. Since the two bodies are in contact, at any given point of time, there is an action of friction on the objects. However, friction can be reduced to a great extent.

V. Answer the following questions in detail.

1. Explain the three types of friction, giving examples for each.

Ans: The three types of friction are: sliding friction, rolling friction and fluid friction.

Sliding friction: When an object slides, it gives rise to sliding friction. For example, when you push a book on a table, the book slides and experiences sliding friction.

Rolling friction: When an object rolls, it gives rise to rolling friction. For example, a rolling ball.

Fluid friction: Friction offered by liquids and gases. For example, a surfer is able to glide over the waves in the sea because of fluid friction.

2. Explain ways of reducing friction.

Ans: a. Ball bearings are fitted in all types of machinery that involve moving parts. They reduce friction and allow the parts of the machine to move smoothly.

b. Application of grease to the ball bearings reduces friction.

c. An air cushion helps to reduce friction, as in a hovercraft.

3. Explain how friction is advantageous to us.

Ans: Advantage of frictions (Write any three)

- Friction help to ignite match stick
- Friction help to apply break to stop vehicles
- Friction help to walk on ground
- Friction help us to hold object
- Grooves and ridges on tyre increase friction and prevent accident.
- The solo of a shoe has grooves to increase friction between the player and the field. This helps the player to walk or run in the field.

Higher Order Thinking Skills

Give reasons.

1. A bicycle can be slowed down by dragging your feet along the ground.

Ans: Dragging the foot on the ground will increase friction and slow down the bicycle.

2. By spreading sand on an oil spill on the road, you can prevent vehicles from skidding.

Ans: The rough sand particles increase friction between the tyres of the vehicles and the road and prevent accidents.

3. A bowler rubs the cricket ball on his/her clothes during a cricket match.

Ans. To remove the dust particles that are covered on the ball, to reduce friction. The ball will travel further, as the rolling friction is less than the sliding friction.

4. Explain what help sledge moves on the icy surface?

Ans: The sledge moves on the icy surface easily, as ice offers the least friction.