SHREE VASISHTHA VIDHYALAYA

Subject-Science

Chapter name- Friction (Worksheet)

A. Multiple Choice Questions (MCQs)

1. Friction always:
a) Helps motion b) Opposes motion
c) Accelerates motion d) Has no effect on motion

2. Which type of friction acts on a stationary object?
a) Sliding friction b) Static friction
c) Rolling friction d) Fluid friction

3. Which of the following reduces friction?
a) Sanding the surface b) Lubricating the surface
c) Increasing roughness d) Using nails

4. The frictional force depends on:
a) Mass of the object only b) Nature of surfaces only
c) Both mass and nature of surfaces d) Speed of the object only

5. Rolling friction is generally:
a) Greater than sliding friction b) Less than sliding friction
c) Equal to sliding friction d) Zero

6. Which of the following is an example of static friction?
a) Sliding a book on a table b) A car moving on a road
c) A parked car on a slope d) Ice skating

7. Match the following types of friction with examples:

Type of Friction	**Example**
i) Sliding	a) Ball rolling on the floor

ii) Rolling b) Skidding of a tyre
iii) Fluid c) Boat moving in water
iv) Static d) Box at rest on the floor

8. Which of the following is a method to increase friction?
a) Polishing the surface b) Using rough surfaces
c) Using oil d) Using wheels

9. Friction converts:
a) Kinetic energy into potential energy
b) Mechanical energy into heat energy
c) Electrical energy into chemical energy
d) None of these

10. The force that opposes motion in fluids is called:
a) Sliding friction b) Rolling friction
c) Fluid friction d) Static friction

B. Fill in the Blanks

1. Friction always _____ motion.
2. Friction can be _____ by using lubricants.
3. The friction between wheels and the road is called _____.
4. _____ friction acts on objects at rest.
5. _____ friction is responsible for slowing down a moving car.

C. One Word Answers

1. Name the type of friction acting on a moving car tyre.
2. Which friction is the largest among static, sliding, and rolling?
3. Name one method to reduce friction.
4. Which force opposes the motion of objects in liquids and gases?
5. What type of friction helps us to walk without slipping?

D. Short Answer Questions

1. Define friction.
2. Differentiate between static and kinetic friction.
3. Give two examples each of helpful and harmful friction.

4. Why is rolling friction preferred over sliding friction in vehicles?
5. Explain how lubricants reduce friction.

E. Long Answer Questions

1. Explain the factors affecting friction.
2. Describe the different types of friction with examples.
3. Discuss the advantages and disadvantages of friction.
4. How does friction help in walking, writing, and driving vehicles?
5. Suggest measures to reduce friction in machines and vehicles.

F. Assertion and Reason Questions

Instructions: Choose the correct option:

(a) Both Assertion (A) and Reason (R) are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true.

1. Assertion (A): Friction opposes motion.
Reason (R): Friction acts in the opposite direction to the applied force.

2. Assertion (A): Lubricants increase friction.
Reason (R): Lubricants make surfaces smooth and slippery.

3. Assertion (A): Rolling friction is smaller than sliding friction.
Reason (R): Rolling objects deform less compared to sliding objects.

4. Assertion (A): Friction is helpful in writing with a pencil.
Reason (R): Friction between the pencil and paper allows the graphite to leave a mark.

5. Assertion (A): Static friction prevents a stationary object from moving.
Reason (R): Static friction acts only when objects are moving.