Fluid Friction

A hoose the correct answer:

1. What is fluid friction?

- (a) Friction between two solids
- (b) Friction between gases only
- (c) Friction between an object and a fluid (liquid or gas)
- (d) Friction caused by heat

2. Which of the following helps to reduce fluid friction?

- (a) Increasing surface area
- (b) Using sharp edges
- (c) Streamlined shape
- (d) Rough surfaces

3. Which of the following is an example of fluid friction?

- (a) A ball rolling on a table
- (b) A person running
- (c) A fish swimming in water
- (d) A book sliding on a shelf

B. Fill in the Blanks:

- 1. Fluid friction is the resistance offered by ______ and _____ to the motion of objects through them.
- 2. Objects like boats and airplanes are designed with ______ shapes to reduce fluid friction.
- 3. The streamlined shape helps in reducing the ______ while moving through fluids.

C. Case Study:

During a science fair, students tested how different shapes of objects move through water. They observed that a pointed, smooth object moved faster than a flat, wide object. Their teacher explained how fish and birds have streamlined bodies to move easily through water and air.

Case Study Questions:

- 1. What concept were the students exploring in their experiment?
- 2. Why did the pointed object move faster in water?
- 3. How does a streamlined shape help reduce fluid friction?

4. What are some real-life examples of streamlined design in nature and machines?

D. Short Answer Questions:

- 1. Define fluid friction.
- 2. Name two factors that affect fluid friction.
- 3. Why do ships and airplanes have streamlined shapes?

E. Long Answer Questions:

- 1. Explain what fluid friction is and how it differs from other types of friction.
- 2. Describe ways to reduce fluid friction and why it is important in designing vehicles and machines.
- 3. Give examples from nature and human-made designs that use streamlining to overcome fluid resistance.