Work

A. Choose the Correct Answer:

1. What is work in scientific terms?

- a) Any activity that requires energy
- b) The transfer of energy when a force is applied to move an object
- c) Physical exercise only
- d) Thinking or studying

2. When is work said to be done?

- a) When force is applied but no movement occurs
- b) When an object moves in the direction of the applied force
- c) When a person stands still holding a heavy object
- d) When no force is applied

3. What is the unit of work in the SI system?

- a) Newton
- b) Joule
- c) Watt
- d) Kilogram

B. Fill in the Blanks:

- 1. Work is done when ______ is applied, and the object moves in the direction of the force.
- 2. The SI unit of work is ______.
- 3. If there is no _____, no work is done.

C. Case Study:

Anita was pushing a shopping cart in a supermarket.

- When she applied force, the cart moved forward.
- She noticed that the heavier the cart became, the harder she had to push it.
- Later, Anita tried pushing a wall with all her strength, but the wall did not move.
- Her science teacher explained that she did work when the cart moved but not when pushing the wall, as the wall did not move.

Case Study Questions:

- 1. When did Anita do work in the supermarket?
- 2. Why was no work done when Anita pushed the wall?
- 3. How did the weight of the cart affect the amount of work Anita had to do?
- 4. What two factors determine whether work is done or not?

D. Short Answer Questions:

- 1. What is work in scientific terms?
- 2. State the SI unit of work.
- 3. When is no work done, even if force is applied?

E. Long Answer Questions:

- 1. Explain what is meant by work with examples.
- 2. What are the conditions necessary for work to be done? Explain with suitable examples.
- 3. Describe the relationship between force, distance, and work done, using a reallife example.