

1. Which of the following is NOT a type of wear mechanism?

- a) Adhesive wear
- b) Corrosive wear
- c) Abrasive wear
- d) Impact wear

Answer: b) Corrosive wear

Explanation: Corrosive wear is not a type of wear mechanism; it refers to the combined action of corrosion and mechanical wear.

2. Two-body wear occurs when:

- a) A third particle intervenes between the surfaces
- b) Surfaces slide against each other with no intermediate particles
- c) Surface fatigue leads to wear
- d) Lubricants prevent direct contact between surfaces

Answer: b) Surfaces slide against each other with no intermediate particles

Explanation: Two-body wear involves direct contact and sliding between two surfaces with no intervening third body.

3. Fretting wear is characterized by:

- a) Intense impact forces
- b) Abrasive particles between surfaces

- c) Small amplitude oscillatory motion
- d) Corrosive environments

Answer: c) Small amplitude oscillatory motion

Explanation: Fretting wear occurs due to repeated small-scale oscillatory motion between two surfaces in contact.

4. The wear rate in abrasive wear is primarily influenced by:

- a) Relative velocity between surfaces
- b) Hardness of the softer material
- c) Presence of lubricants
- d) Surface roughness

Answer: b) Hardness of the softer material

Explanation: In abrasive wear, the hardness of the softer material determines the wear rate as it dictates the resistance to abrasion.

5. What is the primary cause of adhesive wear?

- a) Surface fatigue
- b) Chemical reactions between surfaces
- c) Bonding and tearing of material from one surface to another
- d) Impact of foreign particles

Answer: c) Bonding and tearing of material from one surface to another

Explanation: Adhesive wear occurs due to the bonding and subsequent tearing of material from one surface to another during relative motion.

6. Which wear mechanism is associated with high-velocity impacts?

- a) Abrasive wear
- b) Impact wear
- c) Adhesive wear
- d) Fretting wear

Answer: b) Impact wear

Explanation: Impact wear results from high-velocity impacts between two surfaces, causing material removal.

7. Cavitation wear is caused by:

- a) Corrosive substances
- b) Oscillatory motion
- c) Formation and collapse of vapor bubbles
- d) High-temperature environments

Answer: c) Formation and collapse of vapor bubbles

Explanation: Cavitation wear occurs due to the formation and collapse of vapor bubbles in a fluid medium, leading to surface damage.

8. Which type of wear is predominant in metal cutting tools?

- a) Abrasive wear
- b) Adhesive wear
- c) Impact wear
- d) Fretting wear

Answer: a) Abrasive wear

Explanation: Metal cutting tools experience abrasive wear due to the presence of hard particles in the workpiece material.

9. Surface fatigue is caused by:

- a) Continuous sliding motion
- b) High-temperature exposure
- c) Repeated cyclic loading
- d) Chemical reactions with the environment

Answer: c) Repeated cyclic loading

Explanation: Surface fatigue results from repeated cyclic loading, leading to crack initiation and propagation on the surface.

10. Which factor is critical in preventing corrosion wear?

- a) Surface roughness
- b) Lubricant viscosity
- c) Chemical composition of materials
- d) Mechanical properties of materials

Answer: c) Chemical composition of materials

Explanation: The chemical composition of materials plays a critical role in preventing corrosion wear by providing resistance to chemical attack.

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