1. What is the primary focus of tribology?

a) Study of electromagnetic forces
b) Study of fluid dynamics
c) Study of friction, wear, and lubrication
d) Study of atomic structure

Answer: c) Study of friction, wear, and lubrication
Explanation: Tribology is the science and engineering of interacting surfaces in relative motion, encompassing the study of friction, wear, and lubrication phenomena.

2. Who is credited with coining the term “tribology”?

a) Leonardo da Vinci
b) Archimedes
c) Sir Isaac Newton
d) Dr. Peter Jost

Answer: d) Dr. Peter Jost
Explanation: Dr. Peter Jost, a British engineer, is credited with coining the term “tribology” in the 1960s to describe the science and technology of friction, wear, and lubrication.

3. Which of the following is NOT a component of tribology?

a) Friction
b) Corrosion
c) Lubrication
d) Wear

Answer: b) Corrosion
Explanation: While corrosion is related to material degradation, it is not directly within the scope of tribology, which focuses on friction, wear, and lubrication.

4. What phenomenon describes the reduction of friction between two surfaces due to an intermediary substance?

a) Adhesion
b) Cohesion
c) Lubrication
d) Abrasion

Answer: c) Lubrication
Explanation: Lubrication involves the introduction of a substance (lubricant) between two surfaces to reduce friction and wear.

5. Which scientist is known for his laws of friction, which describe the relationship between frictional force, applied load, and surface roughness?

a) Galileo Galilei
b) Leonardo da Vinci
c) Sir Isaac Newton
d) Amontons

Answer: d) Amontons
Explanation: Guillaume Amontons formulated the laws of friction in the 17th century, describing the relationship between frictional force, applied load, and surface roughness.

6. What is the primary purpose of surface preparation in tribology?

a) To increase friction
b) To decrease wear
c) To enhance adhesion
d) To reduce lubrication

Answer: c) To enhance adhesion
Explanation: Surface preparation in tribology aims to improve the bonding between surfaces to enhance adhesion and reduce friction and wear.

7. What is the term for the maximum contact pressure between two elastic bodies in contact?

a) Tensile stress
b) Shear stress
c) Hertz contact stress
d) Residual stress

Answer: c) Hertz contact stress
Explanation: Hertz contact stress refers to the maximum pressure between two elastic bodies in contact, often used to analyze the contact between solid surfaces.

8. Which type of stress occurs within a material even after the external force causing the stress is removed?

a) Residual stress
b) Creep stress
c) Surface stress

d) Tensile stress

Answer: a) Residual stress
Explanation: Residual stress remains within a material even after the external force causing the stress is removed, influencing its mechanical properties and performance.

9. What phenomenon describes the progressive deformation of a material under constant load over time?

a) Fatigue
b) Creep
c) Fracture
d) Elasticity

Answer: b) Creep
Explanation: Creep is the gradual deformation of a material under a constant load over time, often occurring at elevated temperatures.

10. Which branch of mechanics deals with the behavior of materials under applied forces, particularly focusing on the initiation and propagation of cracks?

a) Elasticity
b) Viscoelasticity
c) Plasticity
d) Fracture mechanics

Answer: d) Fracture mechanics
Explanation: Fracture mechanics is the branch of mechanics concerned with the behavior of

materials under applied forces, particularly focusing on the initiation and propagation of cracks, defects, and failure.

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