Unit 4 - Week 2:

Assignment 2

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment. Due on 2019-02-13, 23:59 IST.

1) Which of the surface plane is having lowest energy in copper:
   - a. (111)
   - b. (110)
   - c. (100)
   - d. (200)

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   a. (111)

2) Which of the following phenomenon is not surface energy driven?
   - a. Adsorption
   - b. Reconstruction
   - c. Relaxation
   - d. Surface roughness

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   d. Surface roughness

3) Beilby layer is basically:
   - a. A worked layer with a thickness of 1-100 micrometer
   - b. An oxide layer with a thickness of 10-100 nm
   - c. The thin adsorbed layer on the surface
   - d. An amorphous layer on top of severely cold worked layer with a thickness of 1-100 nm

   Score: 0
   Accepted Answers:
5) Fatigue failure may be minimized by:
   - Introducing surface roughness
   - Introducing residual compressive stress on the surface
   - Applying a thin and hard coating by physical vapor deposition
   - Electropolishing the surface

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   b. Introducing residual compressive stress on the surface

6) Wear may be defined as ____________damage of material from the surface by the action of relative motion with another surface:
   - Brittle
   - Catastrophic
   - Bulk Initiated.
   - Surface initiated

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   d. Surface initiated

7) Archard's equation relates wear rate with:
   - Materials parameters
   - Hardness, sliding distance, and load
   - Magnitude and vector of stress
   - Toughness of material

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   b. Hardness, sliding distance, and load

8) The wear suffered by structural components experiencing hypersonic rate of fluid interaction is called:
   - Impingement erosion
   - Fretting wear
   - Low stress wear
   - Abrasive wear

   No, the answer is incorrect.
9) In abrasive wear, the wear rate increases with increase in:  
- a. Sharpness and hardness of the abradant  
- b. Increase in hardness of the substrate surface  
- c. Decrease in sliding distance  
- d. Decrease in normal load  

No, the answer is incorrect.

Score: 0

Accepted Answers:  
- a. Impingement erosion

10) Mechanism of high stress abrasion is by:  
- a. Plastic deformation, subsurface cracking and pitting  
- b. Scratching  
- c. Compressive failure  
- d. Combined action of stress and corrosion  

No, the answer is incorrect.

Score: 0

Accepted Answers:  
- a. Sharpness and hardness of the abradant

11) The probability of gouging wear of a hammer made of tool steel may be reduced by:  
- a. Chromium plating  
- b. Galvanizing  
- c. Thin film of titanium nitride coating  
- d. Applying a thick manganese steel cladding or hard facing  

No, the answer is incorrect.

Score: 0

Accepted Answers:  
- d. Applying a thick manganese steel cladding or hard facing

12) Which of the following consists of at least one dissimilar property in the group?  
- a. Mass of particle impinged on the surface  
- b. Inversely proportional to velocity of particle  
- c. Inversely proportional to mass of particle  
- d. Proportional to hardness of the substrate surface  

No, the answer is incorrect.

Score: 0

Accepted Answers:  
- a. Mass of particle impinged on the surface

13) The probability of slurry erosion of cast iron pipeline may be minimized by:  
- a. Plastic lining  
- b. Galvanizing  
- c. Anodizing
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<td>State the kind of wear usually encountered by hammer heads:</td>
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**Answers:**
- d. Carburizing
- A. Abrasive wear
- E. Erosive wear
- b. Fatigue wear
- d. Adhesive wear
- a. Impact wear
- a. Impact wear
- a. Ploughing action
- a. Continuous impact of solid particle on the surface associated plastic deformation, craters formation, and removal of material in the form of microchip

**Score:** 0

**Accepted Answers:**
- a. Plastic lining
- d. Adhesive wear
- a. Impact wear
- a. Ploughing action

**Note:** The answers provided are incorrect as per the feedback given.
19) Which of the following is not a type of motion?

- a. Motion under fluctuating load
- b. Sliding motion
- c. Oscillatory motion of very small magnitude
- d. Linear motion associated along with impact loading

No, the answer is incorrect.
Score: 0
Accepted Answers:
- c. Oscillatory motion of very small magnitude

19) Lubrication is easiest way of mitigation of the following wear:

- a. Adhesive wear
- b. Erosive wear
- c. Fatigue wear
- d. Abrasive wear

No, the answer is incorrect.
Score: 0
Accepted Answers:
- a. Adhesive wear

20) Which of the following wear falls under abrasive category?

- a. Pitting wear
- b. Galling wear
- c. Gouging wear
- d. Erosion

No, the answer is incorrect.
Score: 0
Accepted Answers:
- c. Gouging wear

21) Which of the following wear does not cause loss of materials?

- a. Spalling
- b. Fretting
- c. Seizure
- d. Oxidative

No, the answer is incorrect.
Score: 0
Accepted Answers:
- c. Seizure

22) Which of the following component usually encounters cavitation wear?

- a. Abrasive Blasting
- b. Mineral handling equipment
- c. Marine ship propeller
- d. Slurry Pipelines

No, the answer is incorrect.
Score: 0
Accepted Answers:
23 Which kind of wear is usually experienced by mild steel sheets transported in railway track? 1 point
   a. Fretting wear
   b. Abrasive wear
   c. Gouging wear
   d. Spalling
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   a. Fretting wear

24 Which of the following wear is usually experienced by hard chromium plated camshaft? 1 point
   a. Spalling
   b. High Stress Abrasion
   c. Impact wear
   d. Brinelling
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   a. Spalling

25 Which kind of wear causes smoothening of surface? 1 point
   a. Polishing wear
   b. Gouging wear
   c. Slurry erosion
   d. Low stress abrasion
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   a. Polishing wear