Assignment 1
Due on 2020-02-12, 23:59 IST.

1. Which of the following is the most basic structural unit of matter?
   - Atom
   - Crystal
   - Element
   - Molecule
   
   The answer is incorrect. Score: 1
   Accepted Answers: Atom

2. Which of the following is not related correctly with respect to the manufacturing processes and their condition of material used?
   - Casting = Carbon steel material is used
   - Forging = Material removal process
   - Welding = Material addition process
   - Extrusion = Material addition process
   
   The answer is incorrect. Score: 1
   Accepted Answers: Forging = Material elimination process

3. Which of the following statement is true corresponding to the bonding of solids?
   - Attractive forces increase with the decrease in distance between the two entities.
   - Attractive forces increase with the decrease in distance between the two entities and attractive force decreases with the increase in distance between the two entities.
   - All of the above statements are true.
   
   The answer is incorrect. Score: 1
   Accepted Answers: All of the above statements are true.

4. Which of the following is not true corresponding to Van der Waals force?
   - These are intermolecular forces.
   - The forces proportional to 1/d^2.
   - These forces are smaller than other bonding forces.
   - These forces are attractive and result in the reappearance of tiny molecules.

5. How many number of atoms are present per unit cell in case of BCC crystal structure?
   
   The answer is incorrect. Score: 2
   Accepted Answers: 2

6. If the radius of an atom is in a cross-sectional hexagonal crystal is r, the length of the edge of the unit cell, a is
   
   Score: 3
   Accepted Answers: \( a = 2r \)

7. Which of the following properties in a solid depends on its crystal structure?
   - Yield stress
   - Rock hardening
   - Ductility
   - Creep

8. The true strain, \( \varepsilon = \ln (1 + e) \), is given by:
   
   Score: 3
   Accepted Answers: \( (1 + e) \)

9. Which of the following property is measured by calculating the area under the stress-strain curve?
   - Hardness
   - Endurance
   - Straightness
   - Toughness

10. The property of a material by which it can be bent or rolled into thin sheets is called:
    - Elasticity
    - Ductility
    - Intergranular
    - Plasticity

11. Which of the following characteristics is a perfectly elastic body held?
    - It has a perfectly smooth surface.
    - It completely recovers its original size and shape when the deforming force is removed.
    - Irreversibly deformed by any external force.
    - It can move freely.

12. The material that has a characteristic of having its original shape when the deforming force is removed is:
    - Elastic
    - Ductile
    - Intergranular
    - Plastic