

Foundations of Materials Science

Materials Science · Practice Test · 8 Questions

1. Which class of materials is characterized by having metallic bonds and a crystalline structure?

- A) Ceramics
- B) Polymers
- C) Metals
- D) Composites

2. What property describes a material's resistance to localized plastic deformation?

- A) Hardness
- B) Ductility
- C) Elasticity
- D) Density

3. Which material type is primarily composed of long-chain organic molecules?

- A) Ceramics
- B) Polymers
- C) Metals
- D) Glasses

4. What is the term for a material that returns to its original shape after an applied load is removed?

- A) Plastic
- B) Brittle
- C) Elastic
- D) Viscous

5. Which of these is a primary characteristic of ceramic materials?

- A) High electrical conductivity
- B) High melting points
- C) High ductility
- D) Low stiffness

6. What state of matter is characterized by a lack of long-range periodic order in its atomic structure?

- A) Crystalline
- B) Amorphous
- C) Metallic
- D) Polymeric

7. Which property measures the ratio of stress to strain in the elastic region of a material?

- A) Young's Modulus
- B) Thermal Conductivity
- C) Hardness
- D) Density

8. What happens to most metals when they are heated significantly below their melting point?

- A) They become brittle
- B) They expand
- C) They become insulators
- D) They lose all mass