

# Foundations of Materials Science

Materials Science · Answer Key · 8 Questions

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**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