# Fundamentals of Materials Science

Materials Science · Answer Key · 12 Questions

**1. Which property describes a material's ability to be hammered or rolled into thin sheets without breaking?**

A) Brittleness
**B) Malleability**
C) Elasticity
D) Conductivity

**2. What is the primary reason why copper is frequently used in electrical wiring?**

A) It is highly magnetic
B) It has a low melting point
**C) It is an excellent conductor of electricity**
D) It is a very hard ceramic

**3. Which of the following is classified as a composite material?**

A) Pure gold
**B) Concrete reinforced with steel**
C) Polystyrene plastic
D) Glass

**4. What happens to the particles of a solid when it is heated?**

A) They stop moving completely
**B) They move further apart and vibrate faster**
C) They turn into a gas instantly
D) They lose their mass

**5. Which material is well-known for being a natural polymer?**

A) Steel
B) Diamond
**C) Cotton**
D) Aluminum

**6. In materials science, what does 'tensile strength' measure?**

**A) Resistance to being pulled apart**
B) Resistance to scratching
C) Ability to conduct heat
D) Ease of melting

**7. Which substance is an example of an amorphous solid?**

A) Table salt
**B) Glass**
C) Diamond
D) Graphite

**8. What is the main characteristic of a ceramic material?**

A) High electrical conductivity
**B) High heat resistance and brittleness**
C) Flexibility at room temperature
D) Ability to be stretched into wires

**9. Which metal is most commonly used as the base for stainless steel?**

**A) Iron**
B) Lead
C) Gold
D) Mercury

**10. What process involves heating an ore to extract a metal?**

**A) Smelting**
B) Freezing
C) Crystallization
D) Condensation

**11. Which of these is a synthetic polymer?**

A) Wood
B) Silk
**C) Nylon**
D) Wool

**12. Which property makes a material 'brittle'?**

A) It bends under pressure
**B) It shatters when struck**
C) It stretches significantly
D) It conducts electricity well