

Introduction to Materials Science

Materials Science · Answer Key · 12 Questions

1. Which of the following is NOT a main category of materials studied in materials science?

- A) Metals
- B) Ceramics
- C) Plastics
- D) Clouds**

2. What property of a material describes its ability to resist scratching or abrasion?

- A) Ductility
- B) Hardness**
- C) Brittleness
- D) Malleability

3. Which type of material is typically a poor conductor of heat and electricity?

- A) Metal
- B) Ceramic**
- C) Alloy
- D) Glass

4. Polymers, like polyethylene (used in plastic bags), are generally categorized as which type of material?

- A) Metals
- B) Ceramics
- C) Composites
- D) Plastics**

5. What is a material made from two or more constituent materials with significantly different physical or chemical properties, which remain separate and distinct at the macroscopic or microscopic level within the finished structure?

- A) Alloy
- B) Composite**
- C) Ceramic
- D) Polymer

6. Steel is an example of which class of materials, primarily made of iron and carbon?

- A) Ceramics
- B) Polymers
- C) Metals**
- D) Semiconductors

7. Which term describes the ability of a material to deform under tensile stress before fracturing?

- A) Hardness
- B) Strength
- C) Ductility**
- D) Toughness

8. Which of these materials is a common example of a ceramic?

- A) Gold
- B) Rubber
- C) Concrete**
- D) Aluminum

9. What property allows a material to be hammered or pressed into thin sheets without breaking?

- A) Brittleness
- B) Malleability**
- C) Elasticity
- D) Viscosity

10. Which of the following is a characteristic of most metals?

- A) They are typically brittle.
- B) They are good electrical conductors.**
- C) They have low melting points.
- D) They are usually transparent.

11. What is the term for a material that can conduct electricity under certain conditions, but not as well as a conductor and not as poorly as an insulator?

- A) Insulator
- B) Conductor
- C) Semiconductor**
- D) Superconductor

12. Glass is an example of which broad category of materials?

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