Fundamentals of Materials Science

Materials Science · Answer Key · 15 Questions

1. Which property describes a material's ability to be drawn into a thin wire without breaking?

A) Malleability
B) Ductility
C) Hardness
D) Elasticity

2. Which of the following is a ceramic material characterized by high heat resistance and brittleness?

A) Copper
B) Polythene
C) Porcelain
D) Rubber

3. What happens to the particles in a metal when it undergoes thermal expansion?

A) They move further apart
B) They shrink in size
C) They disappear
D) They become liquid

4. Which material is classified as a composite because it consists of two or more distinct constituent materials?

A) Pure Gold
B) Reinforced Concrete
C) Aluminum Foil
D) Glass

5. What is the term for a material's resistance to being scratched or indented?

A) Density
B) Viscosity
C) Hardness
D) Opacity

6. Which of these materials is a natural polymer?

A) Nylon
B) Cellulose
C) Polyester
D) PVC

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7. Which metal is commonly added to iron to create stainless steel for better corrosion resistance?

A) Chromium
B) Lead
C) Gold
D) Mercury

8. What is the defining characteristic of a thermoplastic material?

A) It burns at low temperatures
B) It can be melted and reshaped multiple times
C) It remains liquid at room temperature
D) It cannot be recycled

9. Which property is defined as the ability of a material to return to its original shape after being stretched?

A) Plasticity
B) Brittleness
C) Elasticity
D) Conductivity

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

A) Resistance to electrical current
B) Ability to withstand pulling forces
C) Resistance to chemical corrosion
D) Ability to reflect light

11. Which of the following is a physical property rather than a chemical property?

A) Flammability
B) Reactivity with acid
C) Density
D) Oxidation rate

12. Which group of materials is generally known for having high electrical and thermal conductivity?

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

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13. What is the primary purpose of galvanizing iron or steel?

A) To increase weight
B) To provide protection against rust
C) To make it transparent
D) To improve flexibility

14. Which material is extracted from bauxite ore?

A) Copper
B) Iron
C) Aluminum
D) Tin

15. What is the result of a material being 'malleable'?

A) It can be hammered into thin sheets
B) It shatters when struck
C) It conducts electricity well
D) It dissolves in water