

Understanding Steel and its Alloys

Materials Science · Practice Test · 15 Questions

1. What is the primary element that differentiates various types of carbon steel?

- A) Iron
- B) Carbon
- C) Manganese
- D) Silicon

2. Which type of carbon steel contains 0.05 to 0.20% carbon?

- A) High Carbon Steel
- B) Mild Steel
- C) Medium Carbon Steel
- D) Alloy Steel

3. Mild steel is commonly used for what purpose?

- A) Surgical instruments
- B) Construction and railway tracks
- C) Springs
- D) Electrical components

4. Which steel type is known for its high hardness and is used for tools and springs?

- A) Mild Steel
- B) Medium Carbon Steel
- C) High Carbon Steel
- D) Stainless Steel

5. What defines an alloy?

- A) A pure metal
- B) A mixture of two or more metals or a metal and non-metals
- C) A type of ore
- D) A processed metal

6. Alloy steels are made by adding what to steel?

- A) Only other metals
- B) Non-metals like carbon
- C) Other metals and non-metals
- D) Only iron

7. Stainless steel is characterized by its resistance to rust and contains which two primary elements besides iron?

- A) Carbon and Manganese
- B) Silicon and Carbon
- C) Chromium and Nickel
- D) Zinc and Carbon

8. Manganese steel is used in the manufacture of what?

- A) Household appliances
- B) Railway plates
- C) Surgical instruments
- D) Electrical motors

9. What is a key characteristic of electrical steel?

- A) High tensile strength
- B) Reduces electrical loss
- C) Resistant to corrosion
- D) Very hard

10. What is another name for electrical steel?

- A) Silicon Steel
- B) Manganese Steel
- C) Stainless Steel
- D) Carbon Steel

11. Which of the following is an industrial metal blend mentioned in the text?

- A) Brass
- B) Steel
- C) Zinc blende
- D) Bronze

12. What is the chemical formula for zinc blende?

- A) $ZnCO_3$
- B) ZnS
- C) $Zn(OH)_2$
- D) $ZnCl_2$

13. What is the common ore of zinc mentioned?

- A) Calamine
- B) Hematite
- C) Bauxite
- D) Pyrite

14. The process of purification of zinc by distillation involves what?

- A) Melting and solidifying
- B) Cooling liquid zinc to vaporize
- C) Electrolysis
- D) Oxidation

15. Brass is an important alloy primarily containing which two metals?

- A) Copper and Tin
- B) Copper and Zinc
- C) Iron and Carbon
- D) Nickel and Chromium