

Understanding Steel and its Alloys

Materials Science · Answer Key · 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