METALLIC BONDING

Answer all the questions below then check your answers.

1. Which property of metals allows them to be hammered into thin sheets?

- A. Ductility
- B. Malleability
- C. Conductivity
- D. Tenacity

2. Metallic bonding involves:

- A. The sharing of electron pairs between atoms.
- B. The electrostatic attraction between positive ions and a sea of delocalized electrons.
- C. The transfer of electrons from one atom to another.
- D. The attraction between polar molecules.

3. Which of the following is NOT a typical property of metals?

- A. High melting points
- B. Low density
- C. Good conductors of heat
- D. Malleability

4. The ability of a metal to be drawn into wires is known as:

- A. Malleability
- B. Ductility
- C. Conductivity
- D. Tenacity

5. Which factor primarily determines the strength of metallic bonding?

- A. The number of valence electrons
- B. The size of the metal ions
- C. The arrangement of atoms in the lattice
- D. The type of crystal structure

6. Which of the following metals is strongly magnetic?

- A. Copper
- B. Iron
- C. Gold
- D. Aluminium

7. Metals are generally good conductors of electricity because:

- A. They have high melting points.
- B. They contain many free electrons.
- C. They are malleable and ductile.
- D. They form ionic bonds.

8. Which of the following metals is the most malleable?

- A. Iron
- B. Copper
- C. Gold
- D. Aluminium

9. The high density of metals is primarily due to:

- A. The close packing of metal ions.
- B. The presence of many free electrons.
- C. The strong metallic bonds.
- D. The large size of metal atoms.

10. Which of the following metals has the lowest melting point?

- A. Sodium
- B. Iron
- C. Copper
- D. Titanium

11. The property of metals that allows them to be easily shaped without breaking is:

- A. Ductility
- B. Malleability
- C. Conductivity
- D. Tenacity

12. Metallic bonds are formed between:

- A. Positive ions and delocalized electrons.
- B. Positive and negative ions.
- C. Atoms sharing electron pairs.
- D. Polar molecules.

13. Which of the following metals is the best conductor of electricity?

- A. Iron
- B. Copper
- C. Aluminium
- D. Silver

14. Which of the following factors does NOT affect the strength of metallic bonds?

- A. The number of valence electrons
- B. The size of the metal ions
- C. The type of crystal structure
- D. The temperature

15. Which of the following metals is used as a structural material due to its high strength-to-weight ratio?

- A. Aluminium
- B. Iron
- C. Copper
- D. Gold

16. The addition of impurities to a metal to improve its properties is known as:

- A. Alloying
- B. Tempering
- C. Quenching
- D. Annealing

Answers:

1. Which property of metals allows them to be hammered into thin sheets?

   - Answer: B

2. Metallic bonding involves:

   - Answer: B

3. Which of the following is NOT a typical property of metals?

   - Answer: B

4. The ability of a metal to be drawn into wires is known as:

   - Answer: B

5. Which factor primarily determines the strength of metallic bonding?

   - Answer: B

6. Which of the following metals is strongly magnetic?

   - Answer: B

7. Metals are generally good conductors of electricity because:

   - Answer: B

8. Which of the following metals is the most malleable?

   - Answer: C

9. The high density of metals is primarily due to:

- Answer: A

10. Which of the following metals has the lowest melting point?

- Answer: A

11. The property of metals that allows them to be easily shaped without breaking is:

- Answer: B

12. Metallic bonds are formed between:

- Answer: A

13. Which of the following metals is the best conductor of electricity?

- Answer D: Silver

14. Which of the following factors does NOT affect the strength of metallic bonds?

- Answer: D

15. Which of the following metals is used as a structural material due to its high strength-to-weight ratio?

- Answer: A

16. The addition of impurities to a metal to improve its properties is known as:

- Answer: A