



Bonding, Structure and Properties of Matter

Multiple Choice Questions

Set 3

You may use the periodic table to answer these questions.

Tick **one** box.

1. What type of bonding involves charged particles that are held together by strong electrostatic forces of attraction?
 - A. covalent bonding
 - B. hydrogen bonding
 - C. ionic bonding
 - D. metallic bonding
2. What name is given to the change of state in which a substance changes from a solid to a liquid?
 - A. melting
 - B. freezing
 - C. evaporation
 - D. condensation
3. What is the charge on a magnesium ion?
 - A. -2
 - B. -1
 - C. +1
 - D. +2
4. What happens to the electrons in covalent bonding?
 - A. electrons are transferred from one atom to another
 - B. pairs of electrons are shared between atoms
 - C. electrons are delocalised and move throughout the structure
 - D. electrons are released into the surroundings
5. Which of the following does metallic bonding occur in?
 - A. alloys
 - B. fullerenes
 - C. polymers
 - D. small molecules

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6. Which statement describes the structure of sodium chloride?
- A. the ions are arranged in a regular lattice ☐
 - B. it has layers that can slide over each other ☐
 - C. it contains weak intermolecular forces ☐
 - D. it contains delocalised electrons that can move throughout the structure ☐
7. Which of the following types of structure has the lowest melting point?
- A. giant covalent structure ☐
 - B. giant ionic lattice ☐
 - C. polymer ☐
 - D. small molecule ☐
8. What is the state of a typical polymer at room temperature?
- A. solid ☐
 - B. liquid ☐
 - C. gas ☐
 - D. vapour ☐
9. What is the formula of Buckminsterfullerene?
- A. C_4 ☐
 - B. C_{12} ☐
 - C. C_{60} ☐
 - D. C_{70} ☐
10. Why are fullerenes useful as catalysts?
- A. they have a large surface area ☐
 - B. they contain delocalised electrons ☐
 - C. they contain rings of carbon atoms ☐
 - D. they have a hollow shape ☐