Bonding, Structure and Properties of Matter
Multiple Choice Questions

Set 5

You may use the periodic table to answer these questions.

Tick **one** box.

1. What type of bond exists between the atoms in water (H_2O)?
   - A. covalent bond ☐
   - B. hydrogen bond ☐
   - C. ionic bond ☐
   - D. metallic bond ☐

2. Which of the following is **not** a limitation of the particle model? (**HT only**)
   - A. there are no forces shown between particles ☐
   - B. all particles are represented as solid spheres ☐
   - C. it does not show the relative size of the particles ☐
   - D. it shows the arrangement of the particles in each state ☐

3. What is the charge on a chloride ion?
   - A. +1 ☐
   - B. 0 ☐
   - C. -1 ☐
   - D. -2 ☐

4. Which of the following does **not** contain covalent bonds?
   - A. silicon dioxide ☐
   - B. poly(ethene) ☐
   - C. methane ☐
   - D. steel ☐

5. Why are alloys harder than pure metals?
   - A. they contain more atoms ☐
   - B. they contain covalent bonds ☐
   - C. the different sized atoms distort the layers in the structure ☐
   - D. they contain delocalised electrons ☐

6. Why can ionic compounds conduct electricity when melted?
   A. delocalised electrons are free to move ☐
   B. the ions are free to move ☐
   C. they have a higher temperature ☐
   D. the resistance of the structure decreases ☐

7. Why do small molecules have low melting points?
   A. large amounts of energy are needed to overcome the electrostatic forces of attraction ☐
   B. they have weak intermolecular forces ☐
   C. there are many delocalised electrons between the atoms ☐
   D. they contain ionic bonds ☐

8. Why is diamond very hard?
   A. each carbon atom forms strong covalent bonds with other carbon atoms ☐
   B. it contains delocalised electrons ☐
   C. there are strong electrostatic forces of attraction between the atoms ☐
   D. it has weak intermolecular forces ☐

9. Which of the following is **not** a use of fullerenes?
   A. delivering drugs to parts of the body where they are needed ☐
   B. reinforcing tennis rackets ☐
   C. making plastic bags ☐
   D. lubricating artificial joints ☐

10. What name is given to particles with diameters between 1 and 100 nm in size? **(Chemistry Only)**
   E. small molecules ☐
   F. macromolecules ☐
   G. nanoparticles ☐
   H. polymers ☐