

Name _____

Date _____

Due Date _____

Mark _____/50

Chemistry 11**Hand In Assignment – Chemical Bonding**

1. In Electron-Dot (Lewis) structures, only the _____ electrons are represented. (1 mark)

2. Draw Electron-Dot structures for the following atoms: (8 marks)

Li	Be	B	C	N	O	F	Ne

3. Define **electronegativity** (1 mark) –

4. As you move from left to right in a period (horizontal row), the electronegativity of elements tends to ___crease. (1 mark)

5. As you move down a vertical column, electronegativity of elements tends to ___crease. (1 mark)

6. When the electronegativities of two elements are very different, what type of bond will form? (1 mark) _____

7. Use electron-dot diagrams to show the formation of sodium bromide and magnesium sulphide.

a) formation of sodium bromide (1 mark)

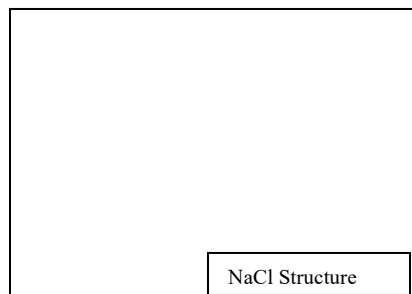
b) formation of magnesium sulphide (1 mark)

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8. a) What can be said about the melting points of ionic compounds in general? (1 mark)
- b) What is the reason for this? (1 mark)
9. Which of the following best describes the structure of the ionic compound NaCl? (1 mark)
- neutral molecules consisting of Na and Cl atoms bonded together.
 - separate Na and Cl atoms which attract each other by London forces.
 - a “crystal lattice” which consists of Na^+ and Cl^- ions all stacked together held by the attraction between + and – charges.

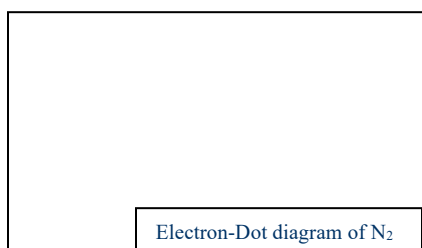
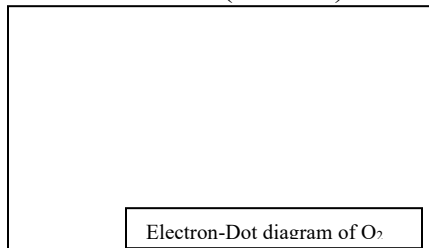
Answer _____

Draw a little sketch of what this structure looks like:
(1 mark)

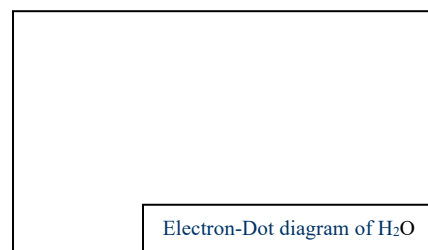


10. What happens to valence electrons in **covalent** bonding? (1 mark)
11. State the **octet rule**: (1 mark)
12. a) Show the electron-dot structure of a diatomic molecule of H_2 . (1 mark)
- b) Show the electron-dot structure of a diatomic molecule of Cl_2 . (1 mark)
- c) In diatomic molecules of elements, the electronegativities of the two atoms are _____, so the electrons are shared _____. (2 marks)
14. In a crystal of solid I_2 , the bonds between “I” atoms in each molecule are (*strong/weak*) _____, while the forces of attraction between one I_2 molecule and another are (*strong/weak*) _____. When iodine is melted, are the covalent bonds between the “I” atoms broken? _____. (3 mark)

15. Draw electron-dot structures for an O_2 and an N_2 molecule to show how valence electrons are shared. (2 marks)



16. In **polar covalent** bonding like in a water molecule, valence electrons are *(equally/unequally)* _____ shared between the “O” and “H” atoms. (1 mark)
Draw the electron-dot structure of water, showing how the valence electrons are shared. Also show the partial charges near the “O” atom and near the “H” atoms (Use δ^+ and δ^-) (1 mark)



17. Define a **dipole** (1 mark)-

18. What can cause a temporary dipole in an atom? (1 mark)

19. The strength of London forces between two atoms depends on the number of _____ (1 mark)

20. The weakest type of bonding force known are called _____ (1 mark)

21. Covalent bonds are *(intramolecular/intermolecular)* _____. (1 mark)

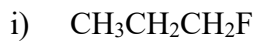
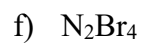
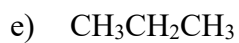
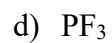
22. London forces are *(intramolecular/intermolecular)* _____. (1 mark)

23. Draw Lewis Structures (Electron-dot diagrams) for the following ionic compounds: (2 marks)

- a) CaF_2

- b) AlF_3

24. Draw Lewis Structures (Electron-dot diagrams) for the following covalent compounds:
(10 marks)



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