**COSTAATT**

**CHEM 111**

**Lesson 2 – Homework**

1. What is the charge of a proton?

(A) +1 (B) -1 (C) 0 (D) 1/1800

2. Which of the following statements about the numbers of protons and neutrons in an atom is true?

(A) They must be the same (B) They are never the same

(C) They are in the ratio 1:2 (D) They can be the same

3. Which of the following statements about the numbers of protons and electrons in an atom is true?

(A) They are always different (B) They are the same

(C) They are sometimes different (D) They can change

4. What does the atomic number represent?

5. What does the mass number represent?

6. How would you figure out the number of protons or electrons in an atom?

7. How would you figure out the number of neutrons in an atom?

8. What term is used for the electrons in the outermost shell or energy level?

9. Explain why atoms bond with one another.

10. Define ionic bonding.

11. Use shell diagrams to represent the ionic bonding between sodium and oxygen to form sodium oxide, Na2O.

12. Calcium forms an ionic bond with fluorine to form a compound.

(a) Give the name of the compound.

(b) Give the formula unit of the compound.

(c) Use shell diagrams to represent the ionic bonding between calcium and fluorine to form the compound.

13. What happens to the electrons when covalent bonds are formed?

(a) They are lost (b) They are gained

(c) They are shared (d) They are not involved

14. Use shell diagrams to represent the covalent bonding in the following elements/compounds:

(a) H2  (b) N2  (c) HBr

15. Draw the shell diagram of the covalent bonding between carbon and chlorine and give the formula of the compound.

16. (i) Draw ring diagrams to show all the electrons in:

(a) a hydrogen chloride molecule

(b) a fluorine molecule

(c) a carbon dioxide molecule

(ii) Are all the electrons in an atom used in bonding? Explain your answer.

**Homework Project – Due date: next class**





