

3. Write Names and Formulas of Compounds
- Compounds that contain a metal or the ammonium ion are ionic, whereas compounds that do not are covalent.
 - The chemical name of an ionic compound indicates the two ions present in the compound, of which the positive ion is always given first.
 - The chemical formula of an ionic compound shows the ratios of each ion present in the compound.
 - The chemical name of a binary covalent compound includes element names and prefixes that indicate the number of each type of atom present in a molecule of the compound.
4. Balance and Explain the Meanings of Chemical Equations
- Chemical equations represent chemical changes by showing the reactants and products in a reaction.
 - The law of conservation of mass states that mass is not created or destroyed in a chemical reaction.
 - In a balanced chemical equation, the number of atoms of each kind of element is the same on both sides of the equation.

CHAPTER REVIEW ANSWERS

Checking Concepts

1.

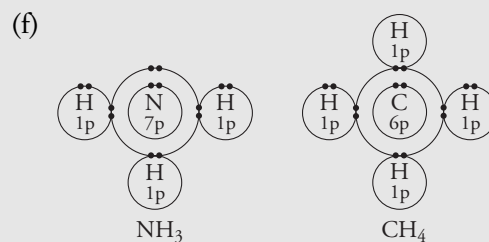
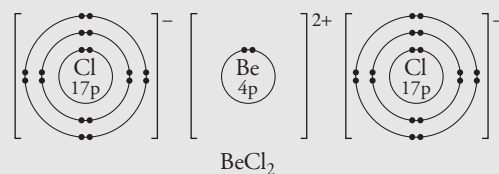
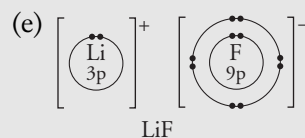
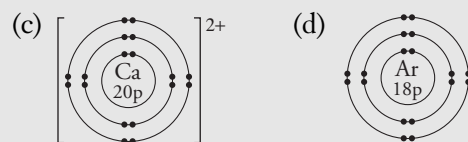
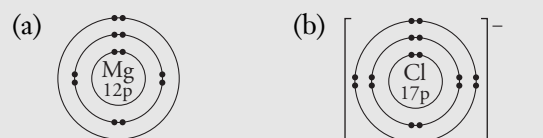
Name of subatomic particle	Proton	Electron	Neutron
Relative mass	1836	1	1837
Charge	+	-	0
Location in the atom	Nucleus	Surrounding nucleus	Nucleus

2. (a) Alkali metals, alkaline earth metals, halogens, noble gases
 (b) 1, 2, 17, and 18, respectively
 (c) Alkali metals: extremely reactive metals
 Alkaline earth metals: somewhat reactive metals
 Halogens: very reactive non-metals
 Noble gases: very unreactive non-metals
3. (a) Metal atoms lose electrons as they become positive ions.
 (b) Non-metal atoms gain electrons as they become negative ions.
4. Stable octet refers to the tendency of atoms to retain eight valence electrons (noble gases) or to gain, lose, or share electrons in order to attain eight valence electrons.

An octet is stable because once an atom or ion has eight valence electrons it becomes chemically less reactive.

5. (a) Multivalent refers to the ability of some metals to form a positive ion in more than one way.
 (b) For example, iron is multivalent as it can form a 2+ or a 3+ ion.
 (c) For example, calcium is not multivalent because it can form only a 2+ ion.
6. (a) Calcium, Ca
 (b) Bromine, Br
 (c) Thallium, Tl
 (d) Lithium, Li
 (e) Helium, He

7.



8.

