

SENIOR SECONDARY COURSE

CHEMISTRY

Student's Assignment – 4

Maximum Marks : 50

Time : 1½ Hours

INSTRUCTIONS

- Answer all the questions on a separate sheet of paper.
- Give the following information on your answer sheet.
- Name
- Enrollment number.
- Subject.
- Assignment number.
- Address.
- Get your assignment checked by the subject teacher at your study centre so that you get positive feedback about your performance.

Do not send your assignment to National Open School

1.
 - (a) Name the components of Bordeaux mixture.
 - (b) Define an ore.
 - (c) How is Flux related to Gangue and Slag?
 - (d) Define Modern Periodic Law.
 - (e) Define lattice energy of a crystalline substance.
 - (f) State two uses of sodium bicarbonate.
 - (g) What are Fullerenes?
 - (h) State a drawback of chloroflourocarbons.
 - (i) Write a chemical reaction showing the strong dehydrating property of sulphuric acid.
 - (j) Write a chemical reaction showing the formation of nitroglycerine from glycerine.
1×10=10
2.
 - (a) Name the parameters of a chemical bond and define any one of them.
 - (b) List four characteristics of a covalent compound.
 - (c) Differentiate π -bond from σ -bond.

- (d) Differentiate Electron affinity from Electronegativity.
- (e) Despite being in different groups lithium shows similarities with Magnesium Explain.
- (f) Hydrated ions of some transition elements appear coloured. Explain the process.
- (g) Elements bearing atomic numbers from 21 to 30 are d-block elements which of them is not a transition element and why?
- (h) List 4 characteristics of Transition Metals.
- (i) How is heavy water different from ordinary water?
- (j) Draw angular resonance structures of nitric oxide. 2×10=20
- (a) Assign the geometry to the following molecules using the VSEPR theory. State reasons for your decisions.
- (i) Phosphorus (V) Chloride (PCl₅)
- (ii) Sulphur (VI) Flouride (SF₆)
- (iii) Boron (III) Flouride (BF₃).
- (b) Potassium permanganate shows different chemical reactions in alkaline, neutral and acidic solutions. Write one chemical equation each, showing the difference in behaviour.
- (c) How purified Haemitite is converted into iron using the process of smelting. Write the chemical equations involved.
- (d) Write the sequence of chemical reactions involved in the production of washing soda using solvay process. 3×4=12
- (a) In the table given below the ionization energy (in kJ mol⁻¹) of some elements is shows against their symbol with atomic number

₃ Li	₄ Be	₅ B	₆ C	₇ N	₈ O	₉ F	₁₀ Ne
520	900	800	1090	1400	1310	1680	2080

Study the table carefully and explain why the increase in ionization potential is not steady as we move from left to right.

- (b) On the basis of the electronic configuration classify elements bearing atomic number 18, 26, 35 and 37 into the following groups.
- (i) Alkaline earth metals
- (ii) Noble gases
- (iii) Halogens
- (iv) Transition elements 4×2=8