through origin is obtained between the rate of reaction against concentration of A, what would be the order of reaction? Why

Chapter- 07

Elements of Group 16, 17, 18 Marks 6 with option 8

Multiple Choice Questions (1 Mark)

i) In chlorous acid, the oxidation state of chlorine is……

(a)+2 **(b) +3** (c) +4 (d) +7

ii) Acidic strength of halogen acids increases in the order of….

(a) HF>HCl>HBr>HI (b) HCL>HF>HBr>HI

(c) HBr>HCl>HF>HI (**d) HI>HBr>HCl >HF**

iii) Sulfur dioxide reacts with sodium hydroxide solution to form ____

(a) Sodium Sulfite (b) Sodium Sulfate

(c) Sodium hydrogen sulfite (d) Sodium hydrogen sulfate

iv) The gas is evolved,when sulfuric acid reacts with copper metal _____

(a) Sulfur dioxide (b) Sulfur trioxide

(c) Nitrogen dioxide (d) Nitrogen trioxide

v) When hot and concentrate alkali NaOH reacts with chlorine to form _____

(a) Only Chlorate (b) Only Hypochlorite

(c) Chloride and Chlorate (d) Chloride and Hypochlorite

vi) When SO_2 is passed through an aqueous solution of I_2 solution becomes _____

(a) ruby red (**b) colorless** (c) violet (d) yellowish green

vii) O_2 molecule is _____

(a) ferromagnetic (b) diamagnetic

(c) paramagnetic (d) ferrimagnetic

viii) The number of covalent bonds are present in sulfuric acid?

(a) 2 (b) 4 (c) 6 **(d) 8**

ix) In Interhalogen compounds, which halogen is never the central atom?

(a) I (**b) F** (c) Br (d) Cl

Very Short Answer Questions (1 Mark)

i) Complete and write the following chemical reaction.

$SO_{2(g)} + Cl_{2(g)} \xrightarrow{\text{charcoal}}$?

ii) Write the name of a solution formed by passing sulfur dioxide in water.

iii) Write chemical formula of galena

i v) Why does oxygen cannot exhibit higher oxidation state?

v)The number of lone pairs of electron are present in ClF_5

vi)Write the order of ionic character of halide with monovalent metal (M)

vii) Write chemical composition of cryolite.

Short Answer Questions (Type- Ⅰ) (2 Marks)

Q.1 Draw structure and name the shape of bromine trifluoride.

Q.2 Write four uses of chlorine.

Q.3 Write a balanced chemical reaction of sulfuric acid with (a) carbon (b) sulfur.

Q.4 Draw resonance hybrid structure of SO_2 in two canonical forms.

Q.5 What is the action of chlorine on (a) cold and dilute sulfuric acid (b) hot and concentrated sulfuric acid.

Q.6 Elements of group 16 have lower ionization enthalpy values compared to those of group 15 elements. Explain why?

Q.7 Write uses of dioxygen.

Q.8 a. Define: Dry bleach

b. Write the name of an element,which is a radioactive decay product of thorium and uranium.

Q.9 Write uses of Neon and Helium.

Q.10 Draw the structure and write shape of Chlorine pentafluoride.

Q.11 Write structure of ozone and sulfur dioxide

Short Answer Questions (Type-II) (3 Marks)

Q.1 What is oxidation state of sulfur in following

(a) Sulfurous acid (b) Sulfuric acid (c) Peroxy monosulfuric acid.

Q.2 Explain why fluorine shows only +1 oxidation state while other halogens show higher positive

oxidation state?

Write chemical reaction of action of Cl_2 in excess NH_3

Q.3 Distinguish between rhombic sulfur and monoclinic sulfur with respect to following points:

Colour, shape,melting point,density,solubility in CS_2,structure.

Q.4 Explain the trend in the following atomic properties of group 16 elements:

(a) atomic radii (b) electronegativity (c) electron gain enthalpy

Q.5 What are chalcogens ? Discuss industrial method of preparation of sulfur dioxide from zinc sulfide and iron pyrites.

Q.6 Write three physical properties and three uses of sulfuric acid.

Q.7 Explain the anomalous behavior of Oxygen with respect to

i) Atomicity ii) Magnetic property iii) Oxidation state

Q.8 Define:Interhalogen compounds.Write general characteristics of interhalogen compounds.

Q.9 Write preparation of Potassium dichromate by using Chromite ore.

Long Answer Questions (4 Marks)

Q.1 Write chemical reactions in the manufacture of sulfuric acid by contact process.

Q.2 What happens when chlorine reacts with following.

(a) Al (b) Na (c) S_8 (d) P_4

Q.3 Draw structure of chloric acid and chlorous acid. Discuss four points of anomalous behavior of fluorine.

Q.4 Write the structures of following oxoacids of sulfur

i) Pyrosulphuric acid ii) Peroxy mono sulphuric acid

iii) Peroxydisulfuric acid iv) Thiosulphuric acid.

Q.5 Write the structures of following oxoacids of chlorine

i) Chloric acid ii) Hypochlorous acid iii) Chlorous acid iv) Perchloric acid.

Q.6 Draw the structures of i) XeF_2 ii) XeF_4 iii) XeF_6 iv) $XeOF_4$