



Chemistry – Subjective (Part-I)

Q.2. Write short answers in the given space of the following questions.
★ What are polycyclic aromatic hydrocarbons?

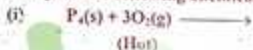
By which process ethanol is prepared on industrial scale world over?

Complete the following chemical reactions:



Write the physical properties of phenol.

Complete the following chemical equations:



What are the similarities of oxygen and sulphur?

What is meant by "Aqua Regia"?

What is the half life of astatine?

Write a note on Hascenelever's Method.

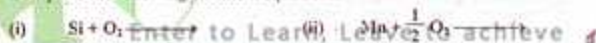
What are the two oxides of Xenon?

Arrange the following ions in order of increasing size.



Which halogen sublimes to violet vapours?

Complete the following chemical equations:



What is ferromanganese? What is its function?

Who and how reject the vital force theory?

What is cracking? Why it is so important process.

What is sabatier and sendern's reaction?

Complete the following chemical reactions:



What is Wurtz-fitting reaction.

What is resonance? Explain with the reference of benzene.

Why SN_2 mechanism is bimolecular?

Why zero group elements show zero oxidation state?

What are "Alkaline earth metals"?

What is the use of potassium oxide in breathing.

What are the common oxidation states of Boron?

What is obtained when boric acid is neutralized by soda ash?

What is catenation or self-linkage?

The aqueous solution of Borax is alkaline in nature. Explain.

Aluminium metal and their alloys are not suitable for marine use. Explain Why?

Why silicone oil is used in hydraulic systems.

- ★ Why Grignard reagent are so important in organic synthesis?
- ★ How phenol is prepared from chlorobenzene by Dow's method?
- ★ Write the physical properties of phenol.
- ★ How we can made distinction between primary, secondary and tertiary alcohols?
- ★ What is the common name of 2-Methylpropanoic acid?
- ★ How will you differentiate between polypeptide and protein?
- ★ What are α -amino acids? Why they are so important?
- ★ From where the name of Portland cement comes?
- ★ What is canizaro's reaction? Why it is called disproportionation reaction?
- ★ What are coinage metals?
- ★ Where the stability of covalent hydrides increases and decreases?
- ★ How many electrons are there in s orbital of valence shell of Alkali metals?
- ★ Why the alkali metals occur in nature in the combined state?
- ★ How boric acid is prepared from borax on commercial scale?
- ★ Complete the following chemical equations:
 - (i) $2Al + 3H_2SO_4 \longrightarrow$
 - (ii) $2Al + 6H_2SO_4 \longrightarrow$
- ★ What are the uses of sodium silicate?
- ★ Complete the following chemical equations:
 - (i) $P_2O_5(s) + O_2(g) \longrightarrow$
 - (ii) $P_2O_5(s) + 3H_2O(l) \xrightarrow{\text{(Cold)}} \longrightarrow$
- ★ Write the physical properties of sulphuric acid.
- ★ Complete the following chemical equations:
 - (i) $H_2S(g) + NO_2(g) \longrightarrow$
 - (ii) $S(s) + 2N_2O(g) \longrightarrow$
- ★ Write a note on Hasenclever's Method.
- ★ What are the uses of bleaching powder?
- ★ What are transition elements?
- ★ Why the d-block and the f-block elements are called the transition elements?
- ★ What are paramagnetic substances?
- ★ What are cis-trans isomers and isomerism?
- ★ In the cis-form, where the similar groups lie?
- ★ Write the physical properties of ethers.
- ★ Complete the following chemical reactions:
 - (i) $NH_3(g) + HNO_3(g) \longrightarrow$
 - (ii) $2NH_3(g) + H_3PO_4(l) \longrightarrow$
- ★ How potassium nitrate is prepared on industrial scale?

★ Complete the following chemical reaction:



★ Write the uses of nitric acid.

★ What are bidentate ligands?

★ What is isomerism?

★ What is chromyl chloride test.

★ What is heat of hydrogenation?

★ What is hydrogenolysis?

★ What is Baeyer's test?

★ What are resonance structures?

★ What is bakelite?

★ What are poly hydric alcohols?

★ What is Williamsons synthesis?

★ What is silver mirror test?

★ What is Zwitter ion?

★ What is Nylon -6, 6?

★ What are micro-nutrients?

★ What is slurry?

★ What is Fehling's solution test?

★ How hydrides are produced?

★ What is Borax?

★ What is chelate?

★ What is substitution?

★ What is hydrogenation?

★ Write a note on electrophile.

★ What is molasses?

★ What is Iodoform test?

★ What is Zwitter ions?

★ Write a note on glycogen.

★ Write the uses of nitric acid.

★ What is ecosystem?

★ What is La of Octaves?

★ What is the electron affinity?

★ What are Actinides?

★ What is shielding effect?

★ What is lime water?

★ What is sodium silicate?

★ What is "Ring test"?

★ What is thermal cracking?

★ What are interstitial compounds?

★ What are saturated hydrocarbons?

★ What is vital force theory?

★ What is Raney Nickel?

★ What are polycyclic aromatic hydrocarbons?

★ What is halogenation?

★ What is molasses?

★ What are mc'lasses?

★ What are the uses of formaldehyde?

★ What is polypeptide?

★ What is the strecker synthesis?

★ What is saponification?

★ What is the effect of radiation on enzymes?

★ What is 2, 4 DNPH test?

★ What are Nobel Gases?

★ What is milk of lime?

★ What is a chemical garden?

★ What is mild steel?

★ What are alicyclic compounds?

★ What is dehydrohalogenation?

★ What are resonance structures?

★ What is a bakelite?

★ What are the uses of Acetaldehyde?

★ What is the degree of polymerization?

★ What are thermosetting polymers?

★ Write a note on lead chromate.

★ What is environmental pollutant?

★ State the modern Periodic Law.

★ What are Lanthanides?

★ What are transition elements?

★ How hydrides are produced?

★ What is milk of magnesia?

★ Describe structure of CO_2 .

Chemistry - Subjective (Part 1)

- (a) Explain Bessemer's process?
- (b) How potassium chromate, potassium dichromate and potassium permanganate is prepared? Give their properties and uses?
- (c) Write down the process of hybridization of orbitals and shapes of molecules.
- (d) Define Isomerism. Explain its type.
- (a) Define alkynes? How it is prepared? Give its properties and uses?
- (b) How will you bring about the following conversion?
- (i) Methane to ethane (ii) Ethane to Methane
- (iii) Acetic acid to Ethane (iv) Methane to Nitromethane
- (c) Write down structural formulas for the products that are formed when 1-buten-1-ene will react with the following reagents:
- (i) H_2 , $t-t'$ (ii) Br_2 in CCl_4 (iii) Cold Cl_2 , $KMnO_4$, OH^- (iv) HBr
- (v) O_3 in the presence of Ag (vi) $HOCl$ (vii) $Dil. H_2SO_4$
- (d) Explain the discovery of the structure of benzene? Or how the structure of benzene was discovered?
3. (a) Explain ionization energy and electron affinity?
- (b) Explain the commercial preparation of Sodium Hydroxide by the Diaphragm cell?
- (c) Compare the physical and chemical properties of alkali metals with those of alkaline-earth metals?
- (d) Explain every compounds of Boron in detail?
4. (a) Why is CO_2 a gas at room temperature while SiO_2 is a solid?
- (b) Write down the preparation of Nitric Acid and also explain the properties and uses of nitric acid.
- (c) How sulphuric acid is manufactured? Give its properties and reaction in detail?
- (d) Explain the reactivities of the halogens as oxidizing agents.
5. (a) What is bleaching powder? How it is prepared? Give its uses and reactions.
- (b) What are noble gases? Explain their inertness on the basis of their electronic configuration and give its application.
- (c) Give the properties and general characteristic of transition elements?
- (d) What is the difference between wrought iron and steel? Explain the Bessemer process for the manufacture of steel.
6. (a) Define Resonance? And explain the resonance method?
- (b) How will you prepare the following compounds from Benzene in two steps.
- (a) m-chloronitrobenzene (b) p-chloronitrobenzene
- (c) What do you understand by the term β -elimination reactions. Explain briefly ethyl magnesium bromide, followed by hydrolysis in the presence of an acid with examples.
- (d) What is Grignard reagent? How it can be prepared? Explain structure and

reactivity and give reactions of Grignard Reagent?

7. (a) Write down two methods for preparation phenol what is the action of following on phenol.
 HNO_3 , NaOH , Zn , Bromine Water, SOCl_2
- (b) What is acetic acid? How it is prepared and give its properties and uses?
- (c) Explain the process of Polymerization?
- (d) What is the chemical nature of enzymes? Discuss the classification of enzymes?
8. (a) How we can manufacture urea?
- (b) Define Cement? Give its compounds? How it is manufactured?
- (c) What are the types of pollution? Explain each type in detail?
- (d) How water is polluted. Write down different methods of water pollution? How we can purify the water?

