

Roll No. _____

(For all Sessions)

Chemistry (Essay Type)

Time: 2:40 Hours

Marks: 68

Section - I**2- Write short answers of any eight parts from the following.**

2 x 8 = 16

- How do you justify the position of hydrogen at the top of VIIA group?
- Why does metallic character increase from top to bottom in a group of metals?
- Why does lime water turn milky with CO_2 but becomes clear with excess CO_2 ?
- Give equations to represent the given reaction. Borax is heated with CuO .
- NO_2 is strong oxidizing agent, prove it with two examples.
- P_2O_5 is a powerful dehydrating agent, show it with two examples.
- What are Silicones?
- What are Silicates?
- Write four uses of HNO_3 .
- What is Biosphere?
- What is BOD?
- What are Isomers? Write isomers of pentane.

3- Write short answers of any eight parts from the following.

2 x 8 = 16

- How acid and base catalyses the reactivity of carboxyl compound?
- Write two examples of Monodentate ligands.
- Write correct names of compounds by I.U.P.A.C system. (A) 4-methyl pentane (B) 3,3,5-Trimethyl hexane
- Write effect of branching on melting point of alkanes.
- What informations do we get from x-ray analysis of benzene.
- Convert (a) $\text{C}_3\text{H}_7\text{Cl} \Rightarrow \text{CH}_3 - \text{CH} = \text{CH}_2$ (b) $\text{C}_3\text{H}_7\text{Cl} \Rightarrow \text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{OH}$
- Write down structures of (a) Vinyl alcohol (b) Lactic acid
- Point out difference between symmetric and unsymmetric ether.
- Write chemistry of chromyl chloride test.
- Write four uses of formaldehyde.
- Draw structures of (a) Alanine (b) Valine
- Draw structures of Dimer of Carboxylic acid.

4- Write short answers of any six parts from the following.

2 x 6 = 12

- What is meant by degree of polymerization. Give an example.
- Write different stages in the manufacture of cement by wet process.
- Give trend of oxidizing power of halogens. Write any two factors on which oxidizing power of halogens depends.
- Write main raw materials used in the production of pulp and paper in Pakistan.
- Define saponification number and iodine number of a fat or an oil.
- How are polyamide resins prepared? Give an example.
- Write any two applications of noble gases.
- Write any two methods of preparation of chlorinedioxide.
- Write any two essential qualities of a good fertilizer.

Section - II**NOTE: Answer any three questions from the following.**

8x3=24

- (a) Discuss the position of hydrogen over IA and VII A group of periodic table. 4
(b) Explain the preparation of Na metal by Down cell. 4
- (a) What do you mean by corrosion. Explain electrochemical theory in detail. 4
(b) Discuss in detail any two components of the environment. 4
- (a) Define Isomerism. Explain position isomerism and functional group isomerism with one example each. 4
(b) Discuss atomic orbital treatment of Benzene. 4
- (a) Explain free radical mechanism for the reaction of chlorine with methane in the presence of Sunlight. 4
(b) Write down important physical properties and uses of phenols. How Bakelite is prepared from it (Phenol)? 4
- (a) How will you make the following conversions from ethyl bromide? 4
i. Propane ii. Propanoic acid iii. Ethene iv. Ethyl cyanide
(b) Describe the mechanism of aldolcondensation reaction? Why does formaldehyde not give this reaction? 4

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