

# CHAPTER NO 01

## PERIODIC CLASSIFICATION

- 1) State Modern Periodic Law. How it removed the defects of Mendeleev's periodic table.
- 2) Write the electronic configuration, group, period and block of:
  - i)  $Z = 24$
  - ii)  $Z = 29$
  - iii)  $Z = 42$

## CHAPTERNO02

### HYDROGEN

#### QUESTION NO 1

- 1) Write four points of similarities and dissimilarities between Hydrogen and group I – A (Alkali metals), Group IV – A (Carbon Family) and Group VII – A (Fluorine Family).
- 2) Write a short note on Atomic Hydrogen.
- 3) Complete the following reactions:
  - i)  $P + [H] \rightarrow$
  - ii)  $O_2 + [H] \rightarrow$
  - iii)  $LiH + H_2O \rightarrow$
  - iv)  $CaC_2 + H_2O \rightarrow$
  - v)  $NaH + H_2O \rightarrow$
  - vi)  $CaH_2 + H_2O \rightarrow$

## CHAPTERNO03

### S-BLOCK ELEMENT

- 1) Explain the following with respect to S – block elements:
  - i) Atomic radius
  - ii) Ionic radius
  - iii) Ionization potential
  - iv) Electronegativity
  - v) Hydration energy
  - vi) Electrode Potential
- 2) Give the reaction of S – block elements with Oxygen, Nitrogen, Hydrogen and halogen.

Explain the extraction of Sodium by Down's process

## CHAPTERNO04

### p-BLOCK ELEMENT

Q2:

What is Aqua regia? How does gold dissolve in it? Give the reactions  
Draw the structure of  $(HNO_3)$  in vapor and solid phase.

**Q3:** How Chlorine is prepared by

- Nelson Cell

## **CHAPTERNO05** **d-BLOCK ELEMENT**

**Q1:** Short note

- Corrosion, Causes and its prevention

**Q2:** General characteristics of d block elements.

**Q3:** Naming of complexes.

## **CHAPTERNO06** **INTRODUCTION TO ORGANIC CHEMISTRY**

**Q1:** Short note

- Polymerization
- Isomerism and its types
- Homologous series

**Q2:** Define the natural sources of organic compound.

**Q3:** Classification of organic compounds.

## **CHAPTER NO 07** **HYDROCARBON**

**Q1:** Draw and explain the orbital structure of Methane.

**Q2:** Define Free radical. Give the mechanism of chlorination of methane in the presence of sunlight.

**Q3:** Draw and explain the orbital structure of Ethane.

**Q7:** State Markownikoff's rule. Write equation for the reaction between vinyl bromide and hydrogen bromide.

**Q10:** Explain electrophile substitution reaction in benzene with refers to:

Write the reaction in benzene along with its full mechanism in the presence of catalyst:

- Halogenation (chlorination **or** bromination)
- Nitration
- Sulphonation reaction
- Friedel-crafts alkylation
- Friedel-crafts acylation

**Q11:** Draw the structure of benzene as suggested by

- i) Kekule's                      ii) Armstrong                      ii) Bayer

**Q15:** What is orientation in benzene? Explain in mono substituted benzene. Give the names of ortho, para and meta directing group.

**Q16:** Give only one equation in each of the following:

- Benzene behave as a saturated hydrocarbon
- Benzene behave as a unsaturated hydrocarbon

## CHAPTERNO08

### ALKYL HALIDES

- 1) What is meant by nucleophile substitution reaction?
- 2) Outline the step wise reaction mechanism  $SN^1$  between 2-chloro 2-methyl propane and NaCN
- 3) Explain the mechanism of  $SN^2$  (Bimolecular Nucleophilic substitution reaction) with example

## CHAPTERNO09

### CARBON COMPOUND WITH OXYGEN CONTAINING FUNCTIONAL GROUP

- 1) What is alcohol? Classification of alcohol? Classify them.
- 2) What is fermentation? How is ethyl alcohol obtain by fermentation of
  - i) Starch
  - ii) molasses
- 3) Write two methods for the preparation of 2-propanone.
- 4) How can you prepare the following?
  - i) Methanal from methanol
  - ii) Methanol from methanal
  - iii) Oxime from formaldehyde
  - iv) Acetone from acetic acid

### ORGANIC CHEMICAL TESTS

5) Give chemical test to distinguish between the following:

1	Alkane and Alkyne Ethane and ethyne Saturated and unsaturated hydrocarbon	2	Alkane and Alkene Ethane and Ethene Saturated and unsaturated hydrocarbon Paraffin oil and olefin
3	Alkene and Alkyne Ethene and Ethyne	4	Alkane and alkyl halide Ethane and Ethyl chloride
5	Aldehyde and Ketone Formaldehyde and acetone	6	n-hexane and benzene
7	Aliphatic and aromatic hydrocarbon	8	1-butyne and 2-butyne

**NOTE: Please go through all the practice tests given  
in class.**

## CHAPTERNO10 CHEMISTRY OF LIFE

**Q1:** Write a short note

- i) Enzymes
- ii) Amino acids
- iii) Carbohydrates

## **CHAPTERNO11**

### **CHEMICAL INDUSTRY IN PAKISTAN**

**Q1:** Write a short note on:

- i) Fertilizers
- ii) Glass
- iii) Plastic