



EXAMINATION MATERIAL OF ZUEB 2021-2022

GRADE: XII

SUBJECT: CHEMISTRY

SECTION # C DETAILED ANSWER QUESTIONS (ERQ)

(INORGANIC CHEMISTRY)

CHAPTER # 01 PERIODICITY OF ELEMENT

TOPICS:	1.7 Classification and long form of periodic table on the basis of electronic configuration.
	1.6 Modern periodic law-Periodic table based on Moseley's contribution

1. Discuss the classification of long form of the periodic table on the basis of electronic configuration.
2. Define Modern periodic law and discuss the different blocks in the modern periodic table.

CHAPTER # 02 HYDROGEN

TOPICS:	2.2 Position of hydrogen in the periodic table
	2.5 Binary compounds of hydrogen

1. Describe the position of hydrogen with group VII-A & group IV-A.
2. Describe the position of hydrogen with group I-A & group VII-A.
3. Define hydrides of hydrogen. Write its classification and also explain covalent and complex hydrides.

CHAPTER # 03 S – BLOCK ELEMENT

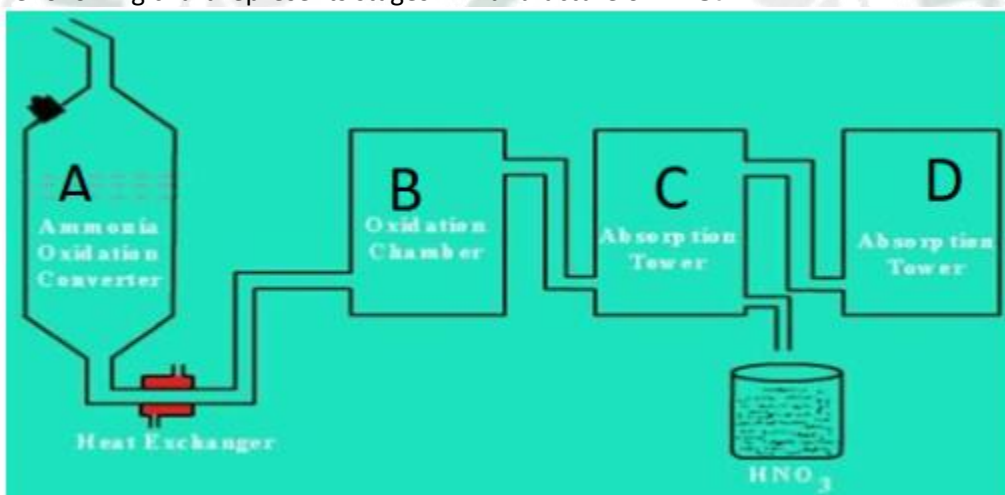
TOPICS:	3.4 Occurrence and Extraction of metals
---------	---

1. Explain the extraction of sodium metal by Down's cell. Why CaCl_2 added during the extraction of sodium metal.

CHAPTER # 04 P – BLOCK ELEMENT

TOPICS:	4.6 Nitric Acid (HNO_3)
	4.9 Sulphuric acid by contact process

1. How nitric acid can be prepared by **Ostwald's** process. Also describe its structure in vapor and solid phase.
2. Describe the formation of sulphuric acid by **contact** process. Also describe its sulphonating & dehydrating properties.
3. The following chart represents stages in manufacture of HNO_3



- Describe the chemical process in stage **A** along with the conditions for maximum conversion.
- Describe the process in **B** and **C**.
- How 98% concentrated HNO_3 is obtained

CHAPTER # 05 D – BLOCK ELEMENT

TOPICS:	5.3 General characteristics
	5.4 Metallurgy of Copper

1. Describe the general characteristics of d-block element.
2. How blister copper can be extract from copper pyrite.
3. Explain the refining of blister copper by electrolysis.

(ORGANIC CHEMISTRY)

CHAPTER # 06 INTRODUCTION TO ORGANIC CHEMISTRY

TOPICS:	6.7 Isomerism
---------	---------------

1. Define isomerism. Explain the types of isomerism with an example.

CHAPTER # 07 CHEMISTRY OF HYDROCARBONS

TOPICS:	7.6 Benzene
	7.7 The Molecular orbital treatment of Benzene

1. Why does Benzene give electrophile substitution reaction? Give stepwise mechanism of nitration and chlorination in Benzene.
OR
Why does Benzene give electrophile substitution reaction? Give stepwise mechanism of Friedel craft's Alkylation and Acylation reaction.
2. Explain the structure of Benzene by molecular Orbital treatment and discuss the stability of Benzene molecule.
OR
Explain the structure of Benzene by molecular Orbital treatment and also draw the resonance structures of benzene.
3. What is orientation in Benzene. Explain orientation in mono-substituted Benzene. Give the names of ortho-para and meta directing group.
4. Give Kekule's structure of Benzene. Write the objections against it. How were these objections removed?

- Write the stepwise reactions for the following preparations:
 - m-Nitro benzoic acid from benzene
 - Glyoxal from benzene
- Explain the structure of Benzene by molecular Orbital treatment along with orbital structure. Benzene acts as a saturated and unsaturated compounds. Justify this statement by equations.
- Write the preparation of benzene by any four different method with their chemical equations.

CHAPTER # 08 ALKYL HALIDES

TOPICS:	8.1 Classification of Alkyl Halides
	8.4 Mechanism of Nucleophilic substitution Reactions

- What are Nucleophilic substitution reaction? Explain the reaction mechanism of SN^2 and SN^1 with example.
- What is β -Elimination reaction? Write the mechanism of E_1 and E_2 reaction.

OR

 What are Elimination reactions? Write Bimolecular Elimination reaction with its mechanism.
- Outline the stepwise reaction mechanism for the following: SN^1 reaction between 2-chloro-2-methyl propane and NaOH.
- Define alkyl halides. Write its classification. How alkyl halide can be prepared by alkene and alcohol.
- What is Grignard reagent? Write its preparation. What happened when Grignard reagent react with following give chemical equation.
 - Carbon dioxide
 - Ethanal
 - Acetone
 - Formaldehyde

CHAPTER # 09 OXYGEN CONTAINING FUNCTIONAL GROUP

TOPICS:	9.1 Alcohols
	9.2 Phenols
	9.3 Aldehydes and Ketones

1. What is Fermentation? How is Ethyl alcohol manufactured by fermentation of:
 - Starch
 - Molasses
2. Distinguish by simple chemical test:
Aldehyde and ketone
3. Give equations for the following reactions:
 - Cannizzaro's reaction
 - Polymerization of Acetaldehyde
 - Reduction of Acetone
 - Oxidation of secondary alcohol
 - Formation of iodoform
4. Draw the structure any **Five** of the following compounds.
 - Carboic acid
 - Resorcinol
 - Phenyl hydrazine
 - Alpha-naphthol
 - Hydroquinone
 - Catechol
 - Picric acid
 - TNT
 - Sodium benzoate
 - Pyrogallor

CHAPTER # 10 CHEMISTRY OF LIFE

TOPICS:	10.3 Carbohydrates
	10.4 Amino Acids

1. Define Amino acids. How are they classified? Explain the role of Amino acids in the human body.
2. What are carbohydrates? How are they classified and discuss the biological Importance of carbohydrates?