

BACHELOR OF SCIENCE (CBCS-2018 COURSE)
S. Y. B. Sc. Sem-III : WINTER :- 2021
SUBJECT: CHEMISTRY : ORGANIC & INORGANIC CHEMISTRY-III

Day : Friday
Date 28-01-2022

W-18351-2021

Time : 10:00 AM-01:00 PM
Max. Marks: 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Solve both sections in **SAME** answer book.

SECTION – I

- Q.1** Attempt any **TWO** of the following: **(12)**
- a) Draw conformation of methyl/cyclohexane. Explain their stability.
 - b) Give any one preparation method for epoxide and discuss the effect of acidic reagents on the epoxide.
 - c) Give synthesis of pyridine. What is the action of following on pyridine:
1) $\text{KNO}_3/\text{H}_2\text{SO}_4$ 2) H_2/Pd
- Q.2** Attempt any **THREE** of the following: **(12)**
- a) Draw the conformation of t-butyl cyclohexane. Explain why is t-butyl group in t-butyl cyclohexane locked in equatorial position.
 - b) Distinguish between Electrophile and Nucleophile.
 - c) What are different types of addition reactions? Explain with suitable example.
 - d) Write a note on Skraup synthesis of quinoline.
- Q.3** A) Attempt any **ONE** of the following: **(06)**
- i) Give any two methods for the preparation of ether. Write the action of following reagents on ether:
1) HI 2) H_2SO_4
 - ii) Explain the terms with example:
1) Homolysis 2) Heterolysis 3) Carbonium ion
4) Free radical

SECTION – II

- Q.3** B) Attempt any **ONE** of the following: **(06)**
- i) What is refining of a metal? Explain Hoopé's process used for refining of Aluminium.
 - ii) Explain the trends in following properties of the d-block elements:
1) density 2) melting and boiling point.
- Q.4** Attempt any **TWO** of the following: **(12)**
- a) Explain biological role of calcium.
 - b) Differentiate between calcination and roasting.
 - c) Explain electronic configuration of first transition metal series and its paramagnetism.
- Q.5** Attempt any **FOUR** of the following: **(12)**
- a) Explain role of metals in Bioinorganic compounds.
 - b) Explain transition metals form large number of complexes.
 - c) Discuss magnetic separation method in metallurgy with diagram.
 - d) Define following terms, flux, mineral, ore and gangue with example.
 - e) What are the functions of haemoglobin and myoglobin?
 - f) Write a note on "Photosynthetic process."

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