

BACHELOR OF SCIENCE (CBCS - 2016 COURSE)
S. Y. B Sc. Sem-IV :SUMMER- 2022
SUBJECT : CHEMISTRY : ORGANIC & INORGANIC CHEMISTRY-IV

Day : Friday

Time : 03:00 PM-06:00 PM

Date : 8/7/2022

S-14817-2022

Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**
- 2) Figures to the right indicates **FULL** marks
- 3) Answers to the both sections should be written in **SAME** answer book

SECTION - I

- Q.1** Attempt **ANY TWO** of the following: (12)
- a) Describe Killiani-Fischer synthesis of aldotriose.
 - b) Write the mechanism for nitration of nitrobenzene with mixed acid. Comment on stability of arenium ion of it.
 - c) What is Green chemistry? Write in detail about green reagents.
- Q.2** Attempt **ANY THREE** of the following: (12)
- a) How will you obtain following compounds from Aniline
i) Benzene ii) Phenol
 - b) Give action of nitrous acid on primary and secondary aromatic amines.
 - c) How will you effect following conversions
i) Methyl alcohol to ethyl alcohol
ii) Methyl iodide to ethyl alcohol
 - d) What are the reactions of following reagents on glucose
i) Br₂ Water ii) dil. HNO₃
- Q.3** A) Attempt **ANY ONE** of the following: (06)
- a) Discuss the importance of Microwave technique in green reactions with examples.
 - b) Explain any six principles of green chemistry with suitable examples.

SECTION -II

- Q.3** B) Attempt **ANY ONE** of the following: (06)
- a) Explain the Lewis concept of acids and bases. What are its assumptions? What are its merits and demerits?
 - b) What is hydrogen bonding? Explain the effect of hydrogen bonding on physical state of the compound.
- Q.4** Attempt **ANY TWO** of the following: (12)
- a) Explain the Arrhenius Concept of acids and bases. Write its merits and demerits.
 - b) Explain physiological role of Potassium, Nitrogen and Phosphorus.
 - c) Explain effect of hydrogen bonding on density of compounds in detail.
- Q.5** Attempt **ANY FOUR** of the following: (12)
- a) What is the origin of Van-der-Waal's forces?
 - b) Explain in brief polymers containing Phosphorus.
 - c) Write a short note on 'Hydracids'.
 - d) Discuss in brief solvent system of acids and bases.
 - e) Explain in detail about trends in the strength of oxyacids.

* * * *