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**BACHELOR OF SCIENCE (CBCS-2018 COURSE)**  
**S. Y. B. Sc. Sem-IV : WINTER- 2022**  
**SUBJECT : CHEMISTRY : ORGANIC & INORGANIC CHEMISTRY-IV**

Day : Tuesday

Time : 02:00 PM-05:00 PM

Date : 13-12-2022

**W-18381-2022**

Max. Marks : 60

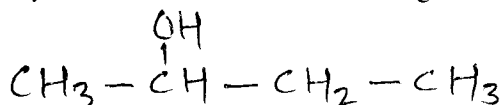
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**N.B.**

- 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
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**SECTION – I**

- Q.1** Attempt **ANY TWO** of the following: (12)
- a) What are carbohydrates? Classify it. Draw structures of Sucrose and Lactose
  - b) Discuss in detail formation and stability of Arenium ion.
  - c) Describe in detail about Microwave method used as green synthesis method
- Q.2** Attempt **ANY THREE** of the following: (12)
- a) How will you effect the following conversions  
i) Nitrobenzene to Phenol ii) Toluene to Benzene
  - b) Write in detail about mechanism for nitration of Toluene with mixed acid.
  - c) How D-Glucose react with excess of Phenyl hydrazine?
  - d) Write a note on sonochemical method used for green reactions
- Q.3** A) Attempt **ANY ONE** of the following: (06)
- a) How will you distinguish aromatic primary, secondary amine by the action of nitrous acid?
  - b) Suggest synthetic route for the following molecule:



**SECTION –II**

- Q.3** B) Attempt **ANY ONE** of the following: (06)
- a) Define Inter and Intra molecular hydrogen bonding. Explain the effect of hydrogen bonding on physical state of the compound
  - b) Explain Bronsted-Lowry acid-base theory with suitable example. Discuss its merits and demerits.
- Q.4** Attempt **ANY TWO** of the following: (12)
- a) Discuss the Lux-Flood acids and bases.
  - b) Explain physiological role of 'K', 'N' and 'P'.
  - c) Explain different polymers containing Boron.
- Q.5** Attempt **ANY FOUR** of the following: (12)
- a) Explain in brief effect of hydrogen bonding on density
  - b) Explain in brief, trends in the strength of oxyacids.
  - c) Define: i) Homo polymer ii) Degree of polymerization iii) Co-polymer
  - d) What are Antacids? Explain any one type of Antacids.
  - e) Explain any two factors affecting strength of Van-der-Waal's forces.

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