

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

Day : Wednesday

Time : 02:00 PM-05:00 PM

Date : 14-12-2022

W-18323-2022

Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Draw neat labeled diagram **WHEREVER** necessary.

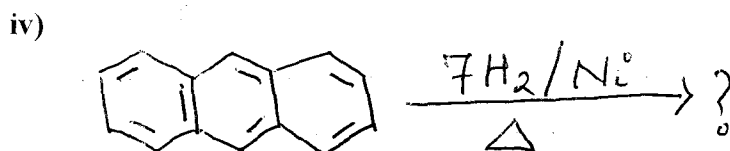
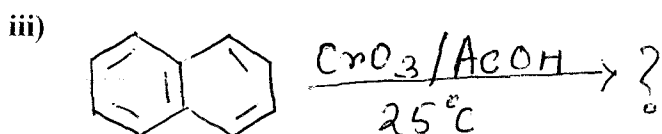
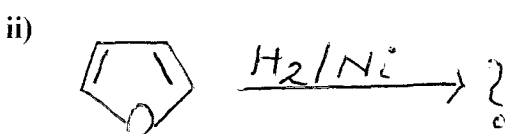
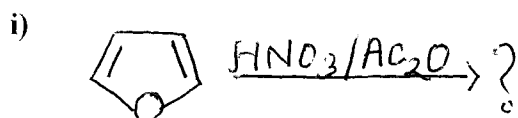
SECTION – I (Organic Chemistry)

Q.1 Attempt **ANY TWO** of the following: [12]

- a) What is conformational isomerism? Draw all possible conformations of n-propane and explain their stability with energy profile diagram.
- b) How do you bring about following conversions?
 - i) Naphthalene to 2-Naphthalene sulphonic acid
 - ii) Anthracene to Anthraquinone
- c) What are heterocyclic compounds? Explain any two methods of synthesis of pyrrole.

Q.2 Attempt **ANY TWO** of the following: [12]

- a) What are enantiomers and diastereomers? Explain with suitable examples.
- b) Discuss any two methods of preparation of cycloalkanes.
- c) Predict the product/s:

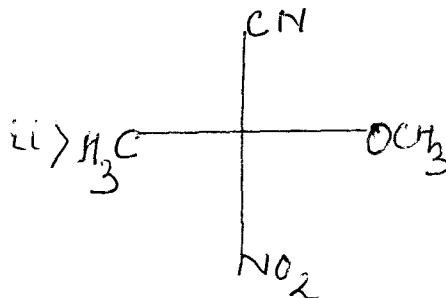
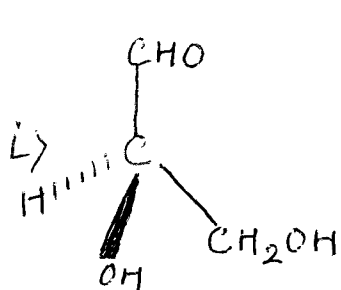


P.T.O.

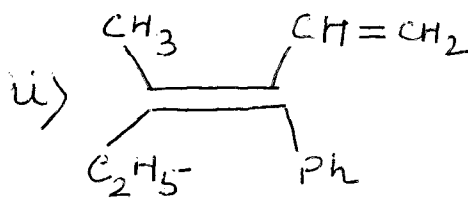
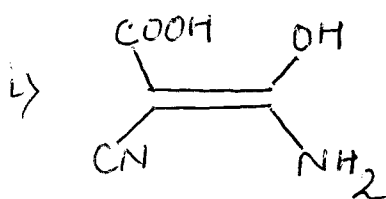
Q.3 Attempt ANY THREE of the following:

[12]

- Discuss the molecular orbital structure of thiophene.
- Discuss the Haworth's synthesis of naphthalene
- Assign R/S configuration to the following compounds. Indicate the sequence of groups clearly and justify your answer.



- Assign E/Z configuration to the following compounds. Justify your answer.



SECTION – II (Inorganic Chemistry)

Q.4 Attempt ANY TWO of the following:

[12]

- What is meant by anomalous behaviour? Discuss anomalous behaviour of borane.
- Write the names and electronic configuration of carbon family elements. Discuss the trends in atomic size, ionization potential, oxidation states and reactivity of these elements.
- Write notes on:
 - Oxyacids of Sulphur
 - Allotropes of Carbon

Q.5 Attempt ANY FOUR of the following:

[12]

- Write electronic configuration of N (At. NO.7), Si (At. NO.14) and Cl (At. NO.17)
- Give two examples each of oxides of nitrogen, interhalogen compounds and oxyacids of phosphorus.
- Explain the terms:
 - Electronegativity
 - Electron affinity
- P-block of periodic table contains metals, non-metal and metalloids. Explain.
- Draw structures of Al_2Br_6 , PCl_5 and SO_4^{2-}
- Write a note on: silicates.

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