

F.Y.B.SC. SEM – II (CBCS - 2016 Course) : WINTER - 2018
SUBJECT: CHEMISTRY: ORGANIC & INORGANIC CHEMISTRY – II (C – 22)

Day : Wednesday
Date : 10/10/2018

Time : 03.00 P.M. To 06.00 P.M
Max. Marks : 60

W-2018-0694

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagrams **WHEREVER** necessary.
- 4) Both the sections should be written in the **SAME** answer book.

SECTION – I

Q.1 A) Select the correct option and rewrite the complete sentence: **[06]**

- a) The resonance energy of naphthalene is _____ kcal/mole.
i) 36 ii) 72 iii) 61 iv) 84
- b) Anthracene contains _____ π – electrons.
i) 2 ii) 6 iii) 10 iv) 14
- c) An isomer of ethanol is _____.
i) Methanol ii) Diethyl ether iii) Acetone iv) Dimethyl ether
- d) Which one of the following is not an interhalogen compound?
i) BrF_3 ii) BrF_5 iii) IF_7 iv) HF
- e) ns^2np^5 is outer electronic configuration of _____ family elements.
i) Boron ii) Nitrogen iii) Carbon iv) Halogen
- f) The common oxidation state of halogen family elements is _____.
i) +1 ii) -1 iii) +2 iv) +5

B) Attempt the following: **[06]**

- a) What is configuration?
- b) Define the term isomerism.
- c) What are polynuclear aromatic compounds?
- d) What are heterocyclic compounds?
- e) Mention the condition necessary for geometrical isomerism.
- f) Why are nitration and sulphonation reactions of five membered heterocyclic compounds carried out by mild reagents?

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

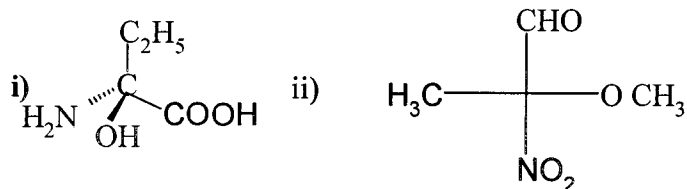
- a) Discuss the molecular orbital structure of pyrrole.
- b) Discuss the Haworth's synthesis of Naphthalene.
- c) Give any two synthesis of furan.
- d) Write a note on : Enantiomers.

Q.3 Attempt **ANY FOUR** of the following: **[12]**

- a) Discuss any two methods of preparation of cycloalkenes.
- b) How do you bring about the following conversions?
 - i) Anthracene to perhydro anthracene.
 - ii) Naphthalene to Decalin.
- c) Discuss the formylation reaction of thiophene.

P.T.O.

d) Assign R/S configuration to the following compounds:

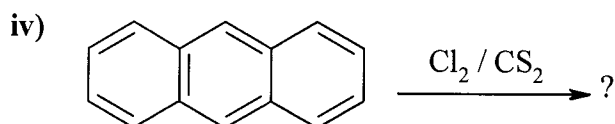
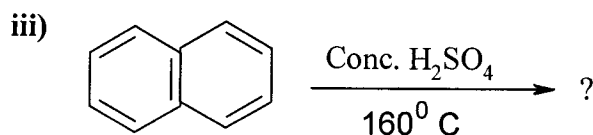
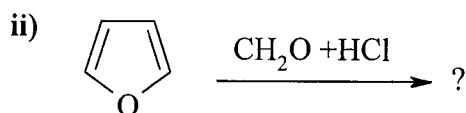
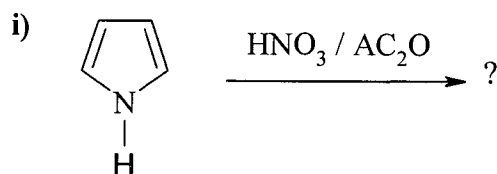


e) Assign E/Z configuration of the following compounds:



Q.4 A) Attempt ANY ONE of the following: [06]

- a) What is conformational isomerism? Draw all possible conformations of ethane and explain their stability with energy profile diagram.
b) Predict the product/s:



SECTION – II

Q.4 B) Attempt ANY ONE of the following: [06]

- a) What is meant by anomalous behaviour? Discuss anomalous behaviour of nitrogen.
b) Draw a rough sketch of periodic table and show the position of halogen family elements. Write the names and outer electronic configuration of halogen family elements. Discuss the trends in atomic size and ionization potential of these elements.

Q.5 Attempt ANY TWO of the following: [12]

- a) Comment upon structures and properties of borates with suitable examples.
b) What are allotropes? Comment upon allotropes of carbon.
c) Write short notes on:
i) Interhalogen compounds
ii) Silicates

* * * *