

F.Y.B.SC. SEM – II (CBCS - 2016 Course) : SUMMER - 2019
SUBJECT : CHEMISTRY: ORGANIC & INORGANIC CHEMISTRY – II (C – 22)

Day : Wednesday
Date : 10/04/2019

S-2019-0812

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

N.B.:

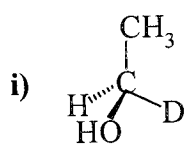
- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagrams **WHEREVER** necessary.
- 4) Both the sections should be written in the **SAME** answer book.

SECTION – I

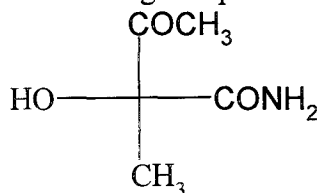
- Q.1** A) Select the correct option and rewrite the complete sentence: **[06]**
- a) How many resonance structures are there for naphthalene?
i) 5 ii) 4 iii) 3 iv) 2
 - b) The resonance energy of furan is _____ kcal/mole.
i) 16 ii) 21 iii) 29 iv) 36
 - c) Which of the following may be separated by ordinary physical methods?
i) A pair of identical molecules.
ii) A pair of enantiomers.
iii) A pair of diastereomers.
iv) A pair of identical atoms.
 - d) Which one of the following is not a p-block element?
i) Boron ii) Carbon iii) Fluorine iv) Sodium
 - e) The common oxidation state shown by fluorine is _____.
i) +1 ii) -1 iii) +2 iv) +5
 - f) Which of the following element shows anomalous behavior?
i) N ii) P iii) As iv) Sb
- B)** Attempt the following: **[06]**
- a) Define heterocyclic compounds.
 - b) Which is the position in five membered heterocyclic compounds, the most favourable for electrophilic attack?
 - c) Define the term stereochemistry.
 - d) What is optical activity?
 - e) What are polynuclear aromatic compounds?
 - f) What is asymmetric carbon atom?
- Q.2** Attempt **ANY THREE** of the following: **[12]**
- a) Discuss any two synthesis of pyrrole.
 - b) Discuss nitration and sulphonation of naphthalene.
 - c) Explain the molecular orbital structure of thiophene.
 - d) Write a note on : Geometrical isomerism.
- Q.3** Attempt **ANY FOUR** of the following: **[12]**
- a) Discuss any two methods of preparation of cycloalkanes.
 - b) How do you bring about the following conversion?
i) Anthracene to anthraquinone.
ii) Anthracene to 9, 10 – dihydroanthracene.
 - c) Discuss the reduction of furan.

P.T.O.

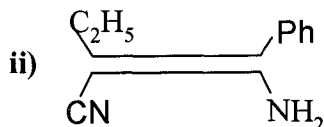
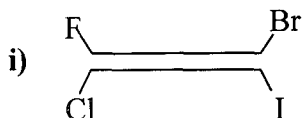
d) Assign R/S configuration to the following compounds:



ii)



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

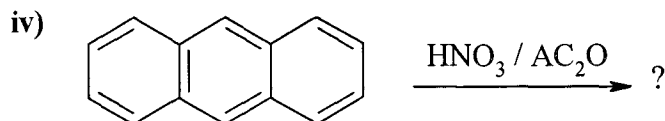
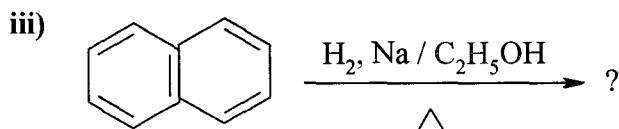
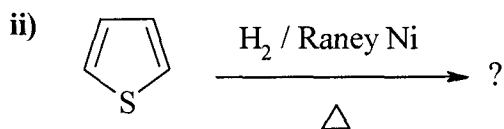
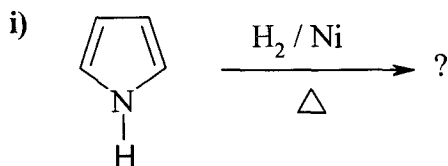


Q.4 A) Attempt ANY ONE of the following:

[06]

a) What is conformational isomerism? Draw all possible conformations of n-Butane 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) Write the names and outer electronic configuration of carbon family elements. Discuss the trends in atomic size, ionization potential and reactivity of these elements.

b) Give one example of : i) halide of aluminium ii) borate iii) silicate. Draw the structure of the same.

Q.5 Attempt ANY TWO of the following:

[12]

a) What is meant by anomalous behavior? Discuss anomalous behavior of fluorine.

b) Comment upon electronegativity, reactivity and oxidation states of halogen family elements.

c) Answer the following:

i) What are oxyacids? Give examples of oxyacids of phosphorous.

ii) Give the comparison between diamond and graphite.

* * * *