F.Y.B.SC. SEM – II (2014 COURSE) : SUMMER - 2018

SUBJECT : CHEMISTRY : ORGANIC & INORGANIC CHEMISTRY (C – 22)

Day : **Thursday** Time : **03.00 PM TO 05.00 PM**

Date : **12/04/2018** Max. Marks : 40

S-2018-0691

N.B.:

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

SECTION – I [Organic Chemistry]

Q.1 Attempt **ANY TWO** of the following: **[10]**

a) What are heterocyclic compounds? Discuss any two synthesis of Thiophene.

b) Discuss any two methods of preparation of cycloalkenes.

c) Write a note on : Enantiomers and Diastereomers.

Q.2 Attempt **ANY TWO** of the following: **[10]**

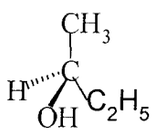
a) What is conformational isomerisms? Draw all possible conformations of ethane and explain their stability with energy profile diagram.

b) Discuss the molecular orbital structure of furan.

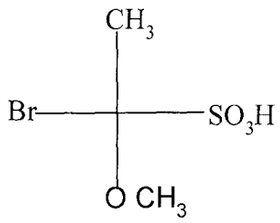
c) How do you bring about following conversions?
i) Naphthalene to 1 – Acetonaphthalene
ii) Anthracene to Anthraquinone

Q.3 A) Attempt **ANY ONE** of the following: **[05]**

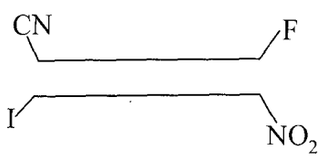
a) i) Assign R/S configuration to the following compounds:



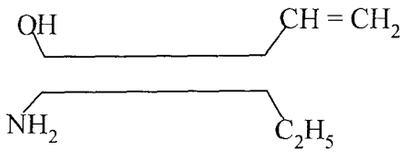
and



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

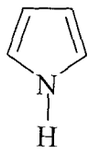


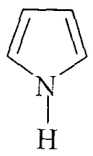
and

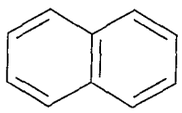


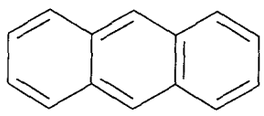
P.T.O.

b) Predict the product/s:

i)  $\xrightarrow[100^0C]{SO_3 \,/\, Pyridine}$?

ii)  $\xrightarrow{CH_3COCl \,/\, SnCl_4}$?

iii)  $\xrightarrow[80^0C]{Conc.\ H_2SO_4}$?

iv)  $\xrightarrow[\triangle]{H_2 \,/\, Ni}$?

SECTION – II [Inorganic Chemistry]

Q.3 B) Attempt **ANY ONE** of the following: **[05]**

a) Discuss anomalous behavior of nitrogen.

b) Show the position of halogen family elements in a rough sketch of periodic table, write the names and outer electronic configuration of halogen family elements. Discuss the trends in atomic size and ionization energy of these elements.

Q.4 Attempt **ANY FIVE** of the following: **[10]**

a) Show the position of p-block elements in a rough sketch of periodic table.

b) What are oxyacids? Mention oxyacids of phosphorous.

c) Define electron affinity. How does it vary down the group of halogen family?

d) What are allotropes? Mention allotropes of carbon.

e) Explain the bonding in Al_2Br_6.

f) Write the names and outer electronic configuration of carbon family elements.

g) What are interhalogen compounds? Give two examples of interhalogen compounds.

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