Roll No..... Total No. of Printed Pages : 4

Code No. : B02/202

Second Semester Online Examination, May-June, 2022

M. Sc. CHEMISTRY

Paper II

CONCEPT IN ORGANIC CHEMISTRY

Time : Three Hours] [Maximum Marks : 80

Note : *Part A and B of each question in each unit consist of 'very short answer type question' which are to be answered in one or two sentences. Part C 'Short answer type' and D 'Long answer type' of each question should be answered within the word limit mentioned.*

UNIT-I

1. (A) What are inclusion compounds ? **2**

(B) Explain annulenes. **2**

(C) Explain conjugation and cross conjugation with examples.

(word limit 200-250) **4**

OR

Explain Huckel's rule for aromaticity.

(D) What is PMO approach for aromaticity ?

(word limit 400-450) **12**

P.T.O.

OR

Write short notes on the following :

(a) Cyclodextrins,

(b) Crown ethers,

(c) Anti-aromaticity.

UNIT-II

2. (A) Give example of Allylic halogenation. **2**

(B) Give example of coupling of alkynes. **2**

(C) Explain arylation of aromatic compounds by diagonium salts.

(word limit 200-250) **4**

OR

Explain neighboring group assistance for free radical reactions.

(D) Write short notes on the following :

(a) Sandmeyer reaction,

(b) Hunsdiecker reaction,

(c) effect of solvent on reactivity for free radical reaction.

(word limit 400-450) **12**

OR

Explain free radical substitution mechanism at an Aromatic substrate.

UNIT-III

3. (A) Write structure of decaline and its conformers. **2**

(B) What are enantiotopic and diastereotopic atoms. **2**

(C) Explain Asymmetric synthesis.

(word limit 200-250) **4**

OR

Explain chirality due to helical shape.

(D) Explain optical activity of the following compounds:

(i) Biphenyls,

(ii) Allenes,

(iii) Spiranes.

(word limit 400-450) **12**

OR

Explain stereo specific and stereo selective synthesis.

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UNIT-IV

4. (A) Write frontier orbitals of 1,3-butadiene. **2**

(B) What is electrocyclic reaction. **2**

(C) Explain Woodword-Hoffman correlation diagram with an example.

(word limit 200-250) **4**

OR

Explain cycloaddition reaction.

(D) Explain PMO and FMO approach for pericyclic reaction.

(word limit 400-450) **12**

OR

Write short notes on :

(i) Sigmatropic rearrangement reaction,

(ii) Cope and aza-cope rearrangement,

(iii) 2 + 2 addition of Ketenes.

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