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W—25—2018

FACULTY OF SCIENCE

B.Sc. (Fifth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2018

(CBCS Pattern)

CHEMISTRY

Paper XII

(Organic and Inorganic Chemistry)

(MCQ+Theory)

(Tuesday, 9-10-2018)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—40

N.B. :— (i) Use same answer-book for Section A and Section B.

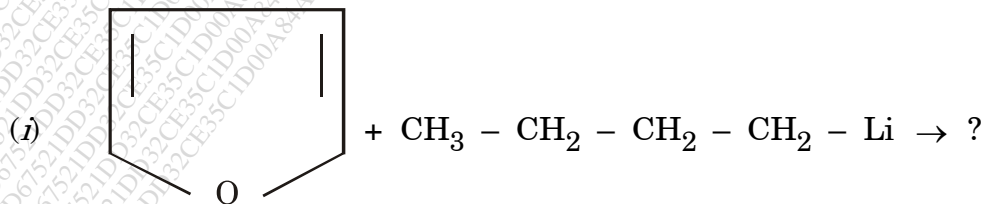
(ii) Attempt *all* questions.

Section A

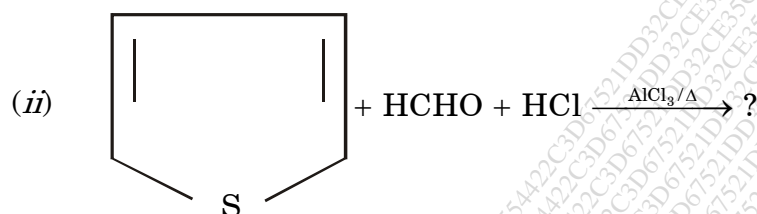
(Organic Chemistry)

1. Answer any *five* of the following : 5×2=10

- (a) Write resonance structure of pyrrole.
- (b) How will you prepare pyridine from  $\beta$ -picoline ?
- (c) Explain the term Antipyretics and Antifungal. Give *one* example of each.
- (d) Write the structural formula of vitamin B<sub>1</sub>. Mention its source and diseases caused by its deficiency.
- (e) Predict the product (s) :



P.T.O.



(f) How will you convert pyridine to 2-amino pyridine ?

(g) Write Friedlander synthesis of quinoline.

(h) Define the following terms with *one* example :

(i) Antimalarials

(ii) Herbicides.

2. Answer any *two* of the following :

2×5=10

(a) Explain the synthesis and uses of the following drugs :

(i) Aspirin

(ii) Benzocaine.

(b) Give the synthesis and uses of the following pesticides :

(i) BHC

(ii) Monochrotophos

(c) How will you convert :

(i) Succinaldehyde to Furan

(ii) Furan to Pyrrole

(iii) Thiophene to 2-acetyl thiophene.

3. Answer any *one* of the following :

1×7=7

(a) Give the synthesis and uses of the following dyes :

(i) Alizarin

(ii) Congo-Red

(iii) Indigo.

(b) Discuss the chemical constitution of Nicotine.

**Section B**  
**(Inorganic Chemistry)**

4. Solve any *three* of the following : 3×3=9
- (a) Explain the IUPAC nomenclature of coordination compound with reference to :
- (i) Order of naming the ion
  - (ii) Order of naming the ligand
  - (iii) Name of the central metal ion.
- (b) What are chelates ? Differentiate between metal complex and metal chelate.
- (c) Describe Rubidium complexes used for the treatment of cancer.
- (d) Write the formulae for the following using IUPAC norms :
- (i) Hexaamine cobalt (III) sulphate
  - (ii) Hexaamine cobalt (III) pentachloro cadmate (II)
  - (iii) Potassium hexacyanoferrate (II).
- (e) What is arthritis ? Explain the role of metal complex for the treatment of arthritis.
5. Solve any *two* of the following : 2×2=4
- (a) Define ligand and coordination compound.
- (b) Draw cis and trans isomers of the following compounds :
- (i)  $[\text{Co}(\text{NH}_3)_2(\text{en})\text{Cl}_2]^+$
  - (ii)  $[\text{Pt}(\text{NH}_3)_2\text{NO}_2\text{Cl}]$
- (c) Give the names of *two* metal complexes used for the treatment of cancer.
- (d) What is E.A.N. ? Calculate the EAN of  $[\text{Ni}(\text{NH}_3)_6]^{+2}$ .