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**B—28—2019**

**FACULTY OF SCIENCE**

**B.Sc. (Fifth Semester) EXAMINATION**

**MARCH/APRIL, 2019**

**(CBCS Pattern)**

**CHEMISTRY**

**Paper XII**

**(Organic and Inorganic Chemistry)**

**(Monday, 18-3-2019)**

**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.

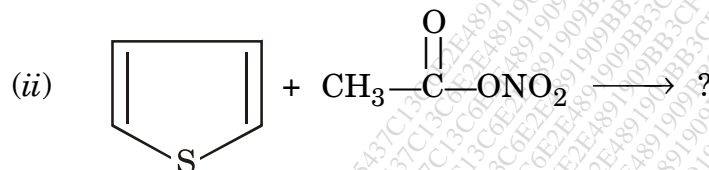
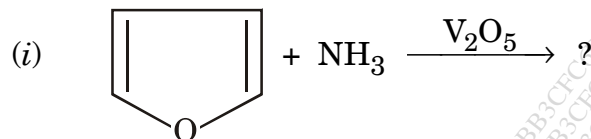
**Section A**

**(Organic Chemistry)**

1. Answer any *five* of the following : 5×2=10
- (a) Write resonance structure of furan.
- (b) How will you prepare pyridine from pentamethylenediamine hydrochloride ?
- (c) Explain the term Analgesics and Antibacterials. Give *one* example of each.
- (d) Write the structural formula of Vitamin 'A'. Mention its source and diseases caused by its deficiency.

P.T.O.

(e) Predict the product(s) :



(f) How will you convert pyridine to pyridine-3-sulphonic acid ?

(g) Write Skraup synthesis of quinoline.

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

(i) Anaesthetics

(ii) Insecticides.

2. Answer any *two* of the following :

2×5=10

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

(i) Paracetamol

(ii) Sulphanilamide.

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

(i) 2, 4-D

(ii) Methoxychlor.

(c) How will you convert :

(i) Acetylene to Pyrrole

(ii) Thiophene to Thiophene-2-Sulphonic acid

(iii) Furan to 2-acetyl furan.

3. Answer any *one* of the following :

1×7=7

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

(i) Methyl orange

(ii) Diamond black-F

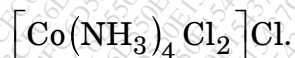
(iii) Orange-II.

(b) What are alkaloids ? Give the synthesis of Nicotine and Ephedrine.

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

4. Solve any *three* of the following : 3×3=9

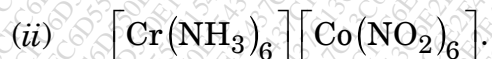
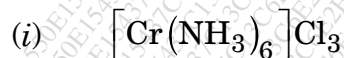
- (a) What are isomerism ? Explain ionisation isomerism and linkage isomerism with suitable example.
- (b) Define chelate, coordination number and coordination compound.
- (c) Explain the mechanism of cisplatin in the treatment of cancer.
- (d) Show primary valencies, secondary valencies and coordination sphere in the following coordination compound :



- (e) Write a short note on Imaging agents.

5. Solve any *two* of the following : 2×2=4

- (a) Write IUPAC name of the following coordination compounds :



- (b) Give *two* examples of anti-arthritis drugs.

- (c) What is EAN ? Calculate the EAN of  $\left[ \text{Cu}(\text{CN})_4 \right]^{-3}$ .

- (d) What are additional compounds ? Give suitable example.