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SB—08—2022

FACULTY OF SCIENCE

B.Sc. (Third Year) (Fifth Semester) EXAMINATION

JUNE/JULY, 2022

(CBCS/Old Pattern)

CHEMISTRY

Paper XII

(Organic and Inorganic Chemistry)

(Monday, 6-6-2022)

Time : 10.00 a.m. to 12.30 p.m.

Time—2½ Hours

Maximum Marks—40

N.B. :— (i) Attempt All questions.

(ii) Figures to the right indicate full marks.

1. Solve any *three* of the following : 3×5=15
 - (a) What are chelates ? How are they classified ? Differentiate between metal chelate and metal complex.
 - (b) Explain different types of optical isomerism in co-ordination number six with suitable example.
 - (c) Write a note on anti-arthritis drugs.
 - (d) Define EAN. Write the name and calculate the EAN of the following complex ions : $[\text{Fe}(\text{CN})_6]^{-4}$ and $[\text{Ni}(\text{CN})_4]^{-2}$.
 - (e) Describe rubidium complexes used for the treatment of cancer.
2. Solve any *three* of the following : 3×5=15
 - (a) Explain resonance and molecular orbital structure of furan.
 - (b) What are functional drugs ? Explain the terms antipyretic, analgesics, anaesthetic antidiabetic drugs with *one* example of each.
 - (c) What are dyes ? Give qualities of good dye ?
 - (d) Give the chemical constitution of Nicotine.
 - (e) What are insecticides ? Give synthesis and uses of B.H.C. and 2, 4-D.

P.T.O.

3. Solve any *two* of the following :

2×5=10

(a) How will you prepare thiophene from :

(i) Acetylene

(ii) *n*-butane ?

Give physical properties of thiophene.

(b) What happens when pyridine is treated with the following :

(i) Fuming H_2SO_4

(ii) Br_2

(iii) *n*-butyllithium

(iv) H_2/Ni

(v) C_6H_5COOOH

(c) What are chemotherapeutic drugs ? Explain the terms antimalarials, antibacterials, antifungals and antibiotics with *one* example of each.

(d) What are vitamins ? How are they classified ?