This question paper contains **3** printed pages]

Y—29—2019

FACULTY OF SCIENCE

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

OCTOBER/NOVEMBER, 2019

(CGPA Pattern)

CHEMISTRY

Paper XII (CH-301)

(Organic and Inorganic Chemistry)

(Friday, 15-11-2019)   **Time : 10.00 a.m. to 12.00 noon**

Time—2 Hours   *Maximum Marks—40*

N.B. :— (i) Attempt *All* questions.

(ii) Figures to the right indicate full marks.

Section (A) Organic Chemistry

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

(*a*) Write resonance structure of pyrrole.

(*b*) Give physical properties of pyridine.

(*c*) Define anaesthetics and anti-inflammatory drugs with suitable example.

(*d*) Give structure of vitamin C. Mention its sources and deficiency diseases.

(*e*) How will you prepare pyrrole from acetylene ?

(*f*) Explain Gattermann-Koch reaction of furan.

(*g*) How will you prepare quinoline by Skraup synthesis ?

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

(*a*) Explain the synthesis of following drugs :

(*i*) Sulphanilamide

(*ii*) Aspirin.

P.T.O.

(*b*) What are insecticides ? Give synthesis and uses of D.D.T. and B.H.C.

(*c*) Explain following reactions of pyridine :

    (*i*) Amination

    (*ii*) Reduction

    (*iii*) Oxidation.

3. Answer any *one* of the following : 1×7=7

(*a*) What are alkaloids ? Give occurrence, extraction and general properties of alkaloids.

(*b*) Give synthesis and uses of the following dyes :

    (*i*) Phenolphthalein

    (*ii*) Methylorange

    (*iii*) Alizarin.

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

(*a*) What are molecular compounds ? How are they classified ?

(*b*) Write the name of the following complexes :

    (*i*) $K_3[Fe(CN)_6]$

    (*ii*) $[CO(en)_2Cl_2]SO_4$

    (*iii*) $[Pt(NH_3)_4]$ $[Pt. Cl_4]$

(*c*) Define geometrical isomerism and draw Cis and Trans form of the following complexes :

    (*i*) $[Pt(NH_3)_2Cl_2]$

    (*ii*) $[(OCNH_3)_4Cl_2]^+$

(*d*) Explain hard and soft bases with suitable examples.

(*e*) Write a short note on electrostatic interaction.

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

   (*a*)   Give the classification of ligands

   (*b*)   Explain Ionization Isomerism with suitable example.

   (*c*)   What is symbiosis ?

   (*d*)   Calculate EAN of the following :

   (*i*) $[CO(NH_3)_6]^{+3}$

   (*ii*) $[Ni(CN)_4]^{-2}$.