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GA—13—2023

FACULTY OF SCIENCE

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

APRIL/MAY, 2023

(New Course)

CHEMISTRY

Paper VI

(Organic and Inorganic Chemistry)

(Monday, 24-04-2023)   **Time : 2.00 p.m. to 4.00 p.m.**

Time— Two Hours   *Maximum Marks*—40

N.B. :—Attempt *All* questions.

1. Solve any *three* of the following :   3×5=15

   (*a*) How is sodium carbonate extract prepared ? Explain its role in qualitative analysis.

   (*b*) How Fe^{+3} and Al^{+3} ions are separated from each other in the analysis of basic radical ?

   (*c*) Explain the uses of organic reagent like Dimethyl glyoxime in qualitative analysis.

   (*d*) Explain the following physical properties of solvent :

        (*i*) Dielectric Constant

        (*ii*) M.P. and B.P.

   (*e*) Discuss the Acid-base reactions in liq NH_3 and liq SO_2.

2. Solve any *three* of the following :   15

   (*a*) Explain Mannich reaction with mechanism.

   (*b*) How will you synthesize benzoic acid from ?

        (*i*) Phenyl cyanide

        (*ii*) Toluene.

P.T.O.

(c) How will you prepare methyl lithium ? What is the action of methyl lithium on acetone and formaldehyde ?

(d) Explain Baeyer Villiger oxidation reaction with mechanism.

(e) How will you synthesize the following from ethyle acetoacetate :

    (i) Acetyl acetone

    (ii) Propanoic acid

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

(a) How will you prepare salicylic acid from :

    (i) Kolbe's reaction

    (ii) Reimer-Tiemann reaction

(b) Write notes on :

    (i) Hydrolysis of fats and oils

    (ii) Clemmensen reduction.

(c) Explain Meerwein ponds of Verley reduction with mechanism.

(d) What are Soaps ? Explain manufacturing of soaps by Kettles process.