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NA—08—2023

FACULTY OF SCIENCE

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

NOVEMBER/DECEMBER, 2023

(New Pattern)

CHEMISTRY

Paper-VI

(Organic and Inorganic Chemistry)

(Monday, 4-12-2023)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 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) Define the following terms :

(i) Qualitative analysis

(ii) Macro-qualitative analysis

(iii) Micro-qualitative analysis

(iv) Semi-microqualitative analysis

(v) Acidic radical.

(b) How the group III A and III B separate in the analysis of basic radicals ?

(c) Explain the role of organic reagent like 8-hydroxy quinoline in qualitative analysis.

(d) Why is water known as 'Universal Solvent' ?

(e) Discuss the autoionization in liq.NH₃ and liq. SO₂.

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2. Solve any *three* of the following :

3×5=15

- (a) Explain Benzoin Condensation reaction with mechanism.
- (b) What is the action of the following on phthalic acid ?
 - (i) Heat
 - (ii) PCl_5
 - (iii) $\text{C}_2\text{H}_5\text{OH}$.
- (c) What are organozinc compounds ? How will you obtain the following from diethyl zinc ?
 - (i) Ethane
 - (ii) 2-butanol.
- (d) Explain Oppenauer oxidation reaction with mechanism.
- (e) How will you synthesized succinic acid from ethyl acetoacetate ?

3. Solve any *two* of the following :

2×5=10

- (a) How will you synthesize anthranilic acid from ?
 - (i) Phthalimide
 - (ii) O-nitro toluene.
- (b) Write notes on :
 - (i) Iodine value
 - (ii) Aldol condensation.
- (c) Explain Perkin reaction with mechanism.
- (d) What are Detergents ? How are they classified ?

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