SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc. END SEMESTER EXAMINATIONS NOVEMBER-2022
SEMESTER - III
20UCHCT3006 - General Chemistry - VI

Total Duration : 2 Hrs 30 Mins. **Total Marks : 60**

Section A

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Interpret the effect of substituent's on the acidity of aliphatic carboxylic acids.
2. Explain the following reactions
   (i) Dieckmann reaction
   (ii) Transesterfication
3. An organic compound (A) is not cleaved by HCl but reaction with sulphuric acid gives ethyl hydrogen sulphate as one of the product. compound (A) on hydrolysis gives ethanol. Predict the Compound(A) and write the reaction.
4. Illustrate the preparation of the following compounds from ethylmagnesiumbromide.
   (i) Ethylmethyl carbinol
   (ii) n-Proponol
   (iii) Propionic acid
5. Describe the preparation, properties and uses of tetra ethyl lead.
6. List two alcoholic beverages.Discuss the physiological and social aspects of alcoholism.
7. (a) Define primary standard and gives the requirements for a solution to be a primary standard.
   (b) Predict the molality of a solution made by dissolving 35grams of $MgCO_3$ in 750mL of water.
8. 20 mL of HCl solution required 19.85 mL of 0.01M NaOH for complete titration. Calculate the molarity of the HCl solution.

Section B

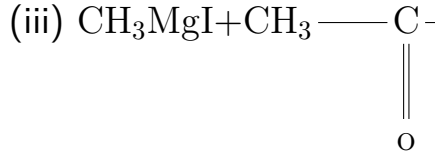
Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Predict the reagents and reaction conditions for the following conversions and write the appropriate equation.

Contd...

(i) Maleic acid $\rightarrow$ Succinic acid
(ii) Sucrose $\rightarrow$ Oxalic acid
(iii) Acetyl chloride $\rightarrow$ Acetaldehyde
(iv) Acetic anhydride $\rightarrow$ Ethylidene diacetate
(v) Ethylpropionate $\rightarrow$ β-keto ester

10. Explain the general methods of preparation, properties and uses of ethers .

11. Ascertain the products formed in the following reactions and write the equation.
(i) $CH_3MgI + CLCOO - CH_2 - CH_3 \longrightarrow$?
(ii) $CH_3Li + CO_2 \longrightarrow$?
(iii) 
(iv) $(C_2H_5)_4\,Pb \xrightarrow{\Delta}$?
(v) $CH_3Li +$ ethylene oxide $\longrightarrow$?

12. Classify the adulterants present in tea, milk, butter, chilli powder, pepper and examine the ways to identify the adulterants.

13. (a) "Methyl orange cannot be used as an indicator for titration of weak acids"-Justify the statement.
(b) Appraise the role of EDTA in complexometric titrations with an example.

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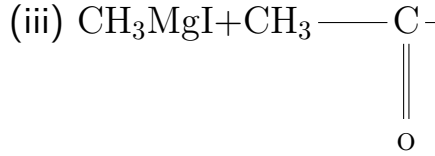
(iii) 
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