

Code No. : B-269(B)

Annual Examination - 2017

B.Sc.-III

CHEMISTRY

Paper-II

ORGANIC CHEMISTRY

Max.Marks : 33

Min.Marks : 11

Time : 3 Hrs.

1100 B Zala... (Hindi text)

Note : Attempt one question from each unit. All questions carry equal marks.

Unit-I

Zala-1. (i) ... (Hindi text)

- i) ... ii) ... iii) ... iv) ...

(CH3)2CHCH2CH3 give tertiary butyl alcohol?

- i) Ethylene ii) Acetaldehyde iii) Formaldehyde iv) Acetone

(r) ... (Hindi text)

Explain the comparative reactivity of Grignard reagent and organolithium compounds with unsaturated carbonyl compounds.

(y) ... (Hindi text)

OR

(i) ... (Hindi text)

- i) ... ii) ... iii) ... iv) ...

Sulphonation of benzene proceeds through :

- i) Nucleophilic substitution ii) Nucleophilic addition iii) Electrophilic substitution iv) Electrophilic addition

Write short notes on the following :

- i) Finger print region ii) Base peak in Mass Spectra

(y) ... (Hindi text)

Write a short note on Anthocyanins.

Unit-V

Zala-5. (i) ... (Hindi text)

- i) 3 ii) 4 iii) 5 iv) 2

How many NMR signals would be obtained by following compound?

- i) 3 ii) 4 iii) 5 iv) 2

(r) ... (Hindi text)

- i) ... ii) ...

Write short notes on the following :

- i) Peak area ii) Chemical shift

OR

(i) ... (Hindi text)

- i) ... ii) ... iii) ... iv) ...

Which compound is used as standard for determining chemical shift ?

- i) Dimethyl Silane ii) Tetramethyl Silane iii) Trimethyl Silane iv) Methyl Silane

(r) ... (Hindi text)

- i) ... ii) ...

Write short notes on the following :

- i) Coupling constant ii) Equivalent proton and Non-equivalent proton.

(r) $\text{CH}_3\text{C}(\text{O})\text{CH}_2\text{C}(\text{O})\text{CH}_3 \xrightarrow{\text{NaOH}} \text{CH}_3\text{C}(\text{O})\text{CH}=\text{C}(\text{O})\text{CH}_3$; $\text{EtO}_2\text{CCH}_2\text{CO}_2\text{Et} \xrightarrow{\text{NaOH}} \text{HOOCCH}_2\text{COOH}$ (3)

What are enolates? How will you prepare dicarboxylic acid from diethyl malonate?

(y) $\text{CH}_3\text{C}(\text{O})\text{CH}_2\text{CO}_2\text{Et} \xrightarrow{\text{NaOH}} \text{CH}_3\text{C}(\text{O})\text{CH}=\text{C}(\text{O})\text{CO}_2\text{Et}$ (Write short notes on the following) : (3)

- i) $\text{CH}_3\text{C}(\text{O})\text{CH}_2\text{CO}_2\text{Et}$ (Sulpha drug)
- ii) $\text{CH}_3\text{C}(\text{O})\text{SH}$ (Mercaptan)

Unit-II

ZalAa-2. (i) $\text{C}_6\text{H}_{12}\text{O}_6$ (Common table sugar is) B (1)

- i) $\text{C}_6\text{H}_{12}\text{O}_6$ (Glucose)
- ii) $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ (Sucrose)
- iii) $\text{C}_6\text{H}_{12}\text{O}_5$ (Fructose)
- iv) $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ (Maltose)

(r) $\text{C}_6\text{H}_{12}\text{O}_6$ \rightarrow $\text{C}_6\text{H}_{10}\text{O}_5$ (2)

Explain the ring structure of glucose.

(y) $\text{C}_6\text{H}_{12}\text{O}_6$ \rightarrow $\text{C}_6\text{H}_{12}\text{O}_6$ (Write short notes on the following) B (4)

- i) $\text{C}_6\text{H}_{12}\text{O}_6$ and $\text{C}_6\text{H}_{12}\text{O}_6$ (Erythro and Threo diastereoisomers)
- ii) $\text{C}_6\text{H}_{12}\text{O}_6$ (Glycosides)

OR

(i) $\text{H}_2\text{N}-\text{CH}(\text{R})-\text{COOH}$ (1)

- i) $\text{H}_2\text{N}-\text{CH}(\text{R})-\text{COOH}$
- ii) $\text{H}_2\text{N}-\text{CH}(\text{R})-\text{COOH}$
- iii) $\text{H}_2\text{N}-\text{CH}(\text{R})-\text{COOH}$
- iv) $\text{H}_2\text{N}-\text{CH}(\text{R})-\text{COOH}$

The linear arrangement of Amino acids in proteins is called :

- i) Primary structure
- ii) Secondary structure
- iii) Tertiary structure
- iv) Quaternary structure

(r) $\text{C}_2\text{H}_5\text{N}_2\text{O}_2$ \rightarrow $\text{C}_2\text{H}_5\text{N}_2\text{O}_2$ (2)

Explain the primary structure of nucleic acids (DNA).

(y) $\text{C}_6\text{H}_{12}\text{O}_6$ \rightarrow $\text{C}_6\text{H}_{12}\text{O}_6$ (Write short notes on the following) : (4)

- i) $\text{C}_6\text{H}_{12}\text{O}_6$ (Tertiary structure of protein)
- ii) $\text{C}_6\text{H}_{12}\text{O}_6$ (Denaturation and Renaturation)

Unit-III

ZalAa-3. (i) C_6H_6 (1)

- i) C_6H_6
- ii) C_6H_6
- iii) C_6H_6
- iv) C_6H_6

Natural Rubber is a polymer of :

- i) Propene
- ii) Isoprene
- iii) Formaldehyde
- iv) Phenol

(r) $\text{CH}_3\text{C}(\text{O})\text{CH}_2\text{CO}_2\text{Et} \xrightarrow{\text{NaOH}} \text{CH}_3\text{C}(\text{O})\text{CH}=\text{C}(\text{O})\text{CO}_2\text{Et}$ (3)

Write the mechanism of condensation polymerization.

(y) $\text{CH}_3\text{C}(\text{O})\text{CH}_2\text{CO}_2\text{Et} \xrightarrow{\text{NaOH}} \text{CH}_3\text{C}(\text{O})\text{CH}=\text{C}(\text{O})\text{CO}_2\text{Et}$ (Write short notes on the following) B (3)

- i) $\text{CH}_3\text{C}(\text{O})\text{CH}_2\text{CO}_2\text{Et}$ (Ziegler Natta catalyst)
- ii) $\text{C}_6\text{H}_{10}\text{N}_2\text{O}_2$ (Structure of Nylon-66)

OR

(i) $\text{CH}_3\text{C}(\text{O})\text{CH}_2\text{CO}_2\text{Et}$ (1)

Which of the following is a chromophore?

- i) C_6H_6
- ii) $-\text{SO}_3\text{H}$
- iii) $-\text{OH}$
- iv) C_6H_6

(r) C_6H_6 \rightarrow C_6H_6 (2)

Explain electronic concept of colour and constitution.

(y) C_6H_6 \rightarrow C_6H_6 (4)

Write the synthesis of following dyes :

- i) C_6H_6 (Congo Red)
- ii) C_6H_6 (Crystal violet)

Unit-IV



ZalAa-4. (i) C_6H_6 (2)

Discuss various types of electronic transition.

(r) C_6H_6 \rightarrow C_6H_6 (3)

With the help of Wood-Word Fieser rule calculate λ_{max} in the following compounds.

(3)



(y) C_6H_6 \rightarrow C_6H_6 (1)

Write a short note on Anthocyanins.

OR

(i) C_6H_6 (1)

Explain fundamental vibration caused by the absorption of IR radiations.

(r) C_6H_6 \rightarrow C_6H_6 (3)

- i) C_6H_6
- ii) C_6H_6