

E 6146



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Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, SEPTEMBER 2024

Sixth Semester

Core Course—CHEMISTRY OF NATURAL PRODUCTS AND BIOMOLECULES

(Common for B.Sc. Chemistry Model I and Model II, B.Sc. Petrochemicals and B.Sc. Chemistry Environment and Water Management)

[Prior to 2013 Admissions]

Time : Three Hours

Maximum Weight : 25

Section A

Answer all questions.

Each bunch of four questions carries a weight of 1.

I. Fill in the Blanks :

1 Monomer unit in natural Rubber is _____.

2 Structure of Citral is _____.

3 Anomers of Glucose are _____.

4 Structure of Piperidine is _____.

II. 5 Sugar present in DNA is _____.

6 _____ is a Non reducing sugar.

7 Disease Rickets is due to the deficiency of _____.

8 Zwitterionic form of Glycine is _____.

III. 9 Name one aldopentose.

10 What do you mean by Enzyme inhibition ?





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- 11 How is Oil differs from fat Chemically ?
- 12 Draw the structure of Cholesterol ?
- IV. 13 Furan and Pyrrole, which is more basic ?
- 14 Give one main source of Nicotine ?
- 15 Name the two main constituents in Cellulose ?
- 16 What are Nucleosides ?

(4 × 1 = 4)

Section B

Answer any five questions.

Each question carries a weight of 1.

- 17 What are Codons ? Mention their functions ?
- 18 Give the Haworth projection of β -D Glucopyranose.
- 19 Pyrrole undergoes electrophilic substitution preferably at C-2 Why ?
- 20 What are Diels Hydrocarbon ? Explain.
- 21 What is Denaturation of Protein ? Explain
- 22 Quinoline is Basic. Explain with reasons ?
- 23 State and Explain Isoprene rule ?
- 24 What is Epimerization ? Explain with an example.

(5 × 1 = 5)

Section C

Answer any four questions.

Each question carries a weight of 2.

- 25 Elucidate the Structure of Geraniol ?
- 26 Explain the Physical and Chemical tests that are used to characterize fats and oils ?





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- 27 Indicate the Structure of Natural Rubber and its geometrical Isomers ? What all changes occur when natural Rubber is Vulcanized ?
- 28 Write briefly on Properties of Enzyme ? Discuss the Mechanism of Enzyme reaction ?
- 29 Give a short account on solution phase peptide synthesis ?
- 30 Write one method each for the Preparation of Pyrrole and Pyridine ? Compare their Basicity with methyl amine, with explanations.

(4 × 2 = 8)

Section D

Answer any two questions.

Each question carries a weight of 4.

- 31 (a) Write briefly on structure of Protein ?
(b) Elucidate the Structure of Coniine ?
- 32 (a) Describe the following with equations involved
(1) Fisher Indole synthesis.
(2) Skraup Synthesis.
(b) Write briefly on Supramolecular Chemistry ?
- 33 (a) How will you convert Glucose into Fructose ?
(b) Outline the reactions by which an aldose sugar is converted to Ketose Sugar.
(c) Outline the ring structure of Fructose ?

(2 × 4 = 8)

