

E 7486

(Pages : 3)

Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2014

Sixth Semester

Core Course—CHEMISTRY OF NATURAL PRODUCTS AND BIOMOLECULES

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

Time : Three Hours

Maximum Weight : 25

Section A

Answer all questions.

Each bunch of four questions carries a weight of 1.

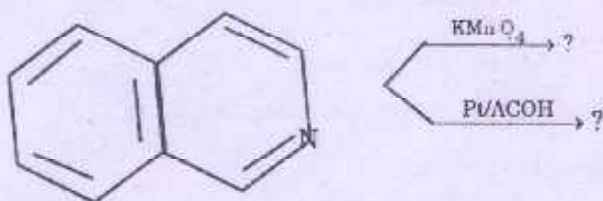
- I. 1. Draw the structure of geraniol.
2. Name the heterocyclic residue present in nicotine.
3. Define Oils.
4. Monomer present in Natural rubber is _____.
- II. 5. Give *two* examples of non-reducing sugar.
6. Give *two* examples of disaccharides.
7. Which reaction indicates that glucose contain 5 hydroxyl group.
8. Write the configuration of aldo triose.
- III. 9. Give *two* uses of furan.
10. Write the hybridisation state of N in pyridine and piperidine.
11. Write the name and structure of dicarboxylic acid obtained when quinoline is oxidised with KMnO_4 .
12. What is the starting substance and final product in the Fischer-Indole synthesis ?
- IV. 13. Give *two* examples for basic amino acids.
14. Draw the structure of Cysteine.
15. Draw the Zwitter ion and nature of amino acids.
16. Give *two* biological functions of nucleic acid.

(4 × 1 = 4)

Turn over

Section B*Answer any five questions.**Each question carries a weight of 1.*

17. Define acid value and Iodine value.
18. Explain the reaction between glucose and phenylhydrazine.
19. Complete the reaction :



20. Which is more basic and why pyrrole and pyridine ?
21. Which position is preferred by electrophile on electrophilic substitution of thiophene and why ?
22. How amino acids classified ?
23. Explain Denaturation of protein.
24. What are the components in DNA and RNA ?

 $(5 \times 1 = 5)$ **Section C***Answer any four questions.**Each question carries a weight of 2.*

25. How Vitamins classified ? Draw the structure of Vitamin C and Vitamin A.
26. Draw both pyranose and furanose structure of fructose.
27. Write briefly on structure of proteins.
28. What are enzymes ? Give their properties. Explain their enzymatic action.
29. Draw the structure of Cholesterol. Give its functions.
30. Write a note on Host-Guest interactivity.

 $(4 \times 2 = 8)$

Section D

Answer any two questions.

Each question carries a weight of 4.

31. Discuss the method of isolation of coniine. Elucidate its structures.
32. (a) Give the structure and *two* reactions of sucrose.
(b) Explain industrial applications of cellulose.
33. (a) Explain the skraup synthesis and Bischler-Napieral skin synthesis.
(b) Explain associate nature of pyrrole, pyridine using Huckel's rule. Give *one* supporting reaction.

(2 × 4 = 8)