

E 6354

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Reg. No.....

Name.....

**B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2019**

**Sixth Semester**

Core Course—CHEMISTRY OF NATURAL PRODUCTS AND BIOMOLECULES

[Common for Chemistry Model I, Model II B.Sc. Petrochemicals B.Sc. Chemistry  
Environment and Water Management]

(2013 Admission onwards)

Time : Three Hours

Maximum Marks : 60

**Part A**

*Answer all questions.*

*Each question carries 1 mark.*

1. Monomer unit of cellulose is \_\_\_\_\_.
2. What is iodine ?
3. What term describe the  $p^H$  at which an aminoacid zwitter ion carries no net charge ?
4. Define isoelectric point.
5. \_\_\_\_\_ is the only  $\alpha$ -aminoacid isolated from protein that is not optically active.
6. Which is meant by optimum temperature of an enzyme ?
7. Which vitamin has a structure that include cobalt atom.
8. Hetero atom present in furan is \_\_\_\_\_.

(8 × 1 = 8)

**Part B**

*Answer any six questions*

*Each question carries 2 marks.*

9. Draw the Pyranose ring structure of  $\alpha$ -D glucose.
10. Give the structure of Vitamin A and C.
11. What is meant by primary and secondary structure of protein ?
12. Discuss the structure and furan according to the resonance concept.
13. Illustrate the Reimer-Tiemann reaction of pyridine with equation.
14. Write a short note on mutarotation.

Turn over

15. Write a short note on specificity of enzyme action.
16. Name and formulate an aromatic amino acid found among protein.
17. Name two non essential amino acid.
18. Give the structural formula of alanine. Give its IUPAC name.

(6 × 2 = 12)

### Part C

*Answer any four questions  
Each question carries 4 marks.*

19. Explain the extraction and refining of fatty acids.
20. Write a note on structure elucidation of conine.
21. Explain why thiophene is more reactive than benzene but less reactive than pyrrole in electrophilic substitution reaction.
22. Explain the term rancidity and RM value.
23. Define the term holoenzyme, apoenzyme and cofactor.
24. Explain about HDL, LDL and Vitamin D.

(4 × 4 = 16)

### Part D

*Answer any two questions  
Each question carries 12 marks.*

25. (i) Explain the action of phenyl hydrazine on (a) Glucose and (b) Fructose.  
(ii) Explain one chemical test each to distinguish between (a) Glucose and fructose ; (b) Fructose and Sucrose.
26. (i) Explain structure and function of Cholesterol.  
(ii) Explain the term host-guest interaction.
27. (i) What are nucleosides and nucleotides.  
(ii) Difference between RNA and DNA.
28. (i) Explain the electrophilic and nucleophilic substitute reaction of pyridine.  
(ii) Explain the electrophilic substitution reaction of isoquinoline.

(2 × 12 = 24)