

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2017

(CUCBCSS—UG)

Chemistry

CHE 6B 10—ORGANIC CHEMISTRY—III

Time : Three Hours

Maximum : 80 Marks

Section A*Answer all questions.**Each question carries 1 mark.*

1. How many absorption peaks are present in the NMR spectrum of toluene ?
2. What is Benedict's reagent ?
3. Write the structure of Methandrostenolone.
4. Give two examples of disaccharides.
5. Write the zwitter ionic form of Alanine.
6. Name the pyrimidine bases present in DNA.
7. Write an example for a ketohexose.
8. Write the structure of Lecithin.
9. Which chemical bonds in DNA molecules must be broken for replication to occur ?
10. Which vitamin is called sunshine vitamin ?

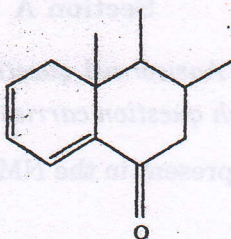
(10 × 1 = 10 marks)

Section B*Answer any ten questions.**Each question carries 2 marks.*

11. What is Fehling solution ? How will it react with Glucose ?
12. What are anomers ? Draw the two anomeric forms of glucose.
13. Explain the biological functions of lipids.
14. What is meant by saponification value ?
15. What are nucleosides and nucleotides ?
16. What is Isoprene rule ? Explain citing one example.
17. Explain Diels Alder reaction.

Turn over

18. What is isoelectric point ?
19. Briefly explain HDL and LDL Cholesterol.
20. Write the Xanthoproteic test for proteins.
21. Calculate the λ_{\max} for the given structure.



22. Explain Strecker synthesis.

(10 × 2 = 20 marks)

Section C

Answer any five questions.

Each question carries 6 marks.

23. Write a short note on solid phase peptide synthesis.
24. Write a note on reducing and non reducing sugars.
25. Explain protein sequencing using Edman degradation.
26. How vitamins are classified ? Draw the structure of Vitamin B₃ and B₆.
27. Discuss on cyclic structure of Fructose.
28. Explain the structure and uses of Citral and Geraniol.
29. (i) Discuss the replication of DNA.
(ii) Difference between DNA and RNA.
30. Explain sigmatropic rearrangement with examples.

(5 × 6 = 30 marks)

Section D

Answer any two questions.

Each question carries 10 marks.

31. (i) Explain Chemical shift in NMR.
(ii) What are essential oils ? How are they extracted from plants ?
32. How will you convert Glucose into Arabinose and vice versa ?
33. Discuss on Primary, Secondary, Tertiary and quaternary structure of proteins.
34. (i) Explain DNA finger printing and its applications.
(ii) Write the structure and physiological functions of nicotine, quinine, and piperine.

(2 × 10 = 20 marks)