

C 80160

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Name.....

Reg. No.....

**SIXTH SEMESTER B.A./B.Sc. DEGREE EXAMINATION, MARCH 2020**

(CUCBCSS—UG)

Chemistry

**CHÈ 6B 10—ORGANIC CHEMISTRY—III**

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer all questions.*

*Each question carries 1 mark.*

1. Sketch the NMR spectrum of ethanol.
2. What is isoelectric point ?
3. What is Tollen's reagent ?
4. Draw the structure of methandrostenolone.
5. State Isoprene rule.
6. Draw the structure of geraniol.
7. State the occurrence of citral.
8. What are steroid hormones ? Give an example.
9. Give the chemical names of vitamins A, B, and B<sub>2</sub>.
10. What are nucleosides and nucleotides ?

(10 × 1 = 10 marks)

**Section B**

*Answer any ten questions.*

*Each question carries 2 marks.*

11. What are the different steps in the biosynthesis of proteins ?
12. Write short note on mutarotation.
13. Write short note on strecker synthesis.
14. Discuss in detail - Denaturation of proteins.
15. Write short note on Killiani - Fischer synthesis.
16. What are the applications of carbohydrates.

**Turn over**

17. What are epimers and anomers ?
18. What are the biological functions of lipids ?
19. What are carbohydrates ? How are they classified ?
20. Discuss the uses of waxes with examples.
21. Write short note on chemical shift.
22. What is meant by Zwitterion ? How does isoelectric point influence the properties of an amino acid ?

(10 × 2 = 20 marks)

### Section C

*Answer any five questions.*

*Each question carries 6 marks.*

23. Briefly discuss secondary and tertiary structure of proteins.
24. How will you distinguish between the following pairs of compounds on the basis of IR spectroscopy :
  - (a) Ethyl alcohol and diethyl ether.
  - (b) Acetic acid and ethyl acetate.
25. What is meant by spin-spin splitting ? Illustrate taking the case of ethyl alcohol.
26. Discuss the structure of starch and cellulose.
27. Discuss the structural details of RNA and DNA and make a critical comment on the functions of these molecules.
28. Discuss the uses of lemon grass oil and Eucalyptus oil.
29. Write short note on Diels-Alder reaction.
30. How are vitamins classified ? Give the structure of one vitamin belonging to each class.

(5 × 6 = 30 marks)

### Section D

*Answer any two questions.*

*Each question carries 10 marks.*

31. Discuss the source, structure and physiological functions of coniine and piperine.
32. Explain in detail DNA fingerprinting and its applications.
33. (a) Write short note on Anabolic steroids and their abuse.  
(b) Write short note on Hydrogenation and drying of oils.
34. (a) Discuss colour tests for proteins.  
(b) Inversion of cane sugar.

(2 × 10 = 20 marks)