19U616S (Pages: 2) Name: ……..……

Reg. No: ……..……

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2022

(CUCBCSS-UG)

CC15U CHE6 B10 – ORGANIC CHEMISTRY - III

(Chemistry - Core Course)

(2016 to 2018 Admissions – Supplementary/Improvement)

Time: Three Hours Maximum: 80 Marks

Section A

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

1. Oils and fats differ mostly in ……
2. A group that give colour to dye is called ……
3. The pH value at which the amino acids show no tendency to migrate when placed in an electric field is known as ……
4. In RNA, adenine pairs with ……
5. Structure of nicotine is the monomer of Nylon 6 is ……
6. The reagent which can be used to differentiate aldose and ketose is ……
7. A linear n-atom molecule has …… normal modes of vibration.
8. The number of signals in the NMR spectra of acetone is ……
9. The shift of absorption maximum to shorter wavelength is called …… shift.
10. Pyridine is …… basic than pyrrole.

(10 × 1 = 10 Marks)

Section B

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

11. What do you mean by active methylene compounds? Give an example.
12. Write a note on Strecker synthesis.
13. Give the structure of citral and geraniol.
14. Differentiate between auxochromes and chromophores. Give an example.
15. Cite the difference between DNA and RNA.
16. What do you mean by mutarotation?
17. What do you mean by R_f value? How is it useful in planar chromatography?
18. Draw the structure of cholesterol.
19. Describe the mechanism of Claisen rearrangement.
20. What do you mean by HDL and LDL?
21. Write any two biological functions of lipids.

22. What are electrocyclic reactions? Give an example.

(10 × 2 = 20 Marks)

Section C

Answer any ***five*** questions. Each question carries 6 marks.

23. Give an example of pericyclic reaction in human body.
24. Discuss the chemistry of the following using suitable example (a) Tollen's test (b) Fehling's test.
25. Describe Watson and Crick model of DNA.
26. Draw the ^{1}H NMR spectra of propionic acid and toluene. Explain.
27. Discuss Edmanns method for the N-Terminal residue analysis of a polypeptide.
28. Describe briefly steroid and peptide hormones.
29. Write a note on vulcanization and its advantages.
30. How will you distinguish using IR spectroscopy?
    (a) ethyl acetate and butanoic acid (b) acetone and propionaldehyde.

(5 × 6 = 30 Marks)

Section D

Answer any ***two*** questions. Each question carries 10 marks.

31. Discuss in detail the primary, secondary and tertiary structure of proteins.
32. How will you convert (a) An aldohexose into an aldopentose (b) An aldopentose into an aldohexose?
33. Discuss the FMO theory for the Diels –Alder reaction between 1,3-Butadiene and Ethylene.
34. Discuss the principle of solid phase peptide synthesis with suitable illustration.

(2 × 10 = 20 Marks)

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