

17U319

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Name:

Reg. No.

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2018

(Regular/Supplementary/Improvement)

(CUCBCSS-UG)

CC15U CHE3 C03 - ORGANIC CHEMISTRY

(Chemistry - Complementary Course)

(2015 Admission onwards)

Time: Three Hours

Maximum : 64 Marks

SECTION A

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

1. The carbon bearing the unpaired electron in a simple alkyl free radical is ----- hybridized.
2. What kind of structural isomerism does the pair of pentan-2-one and pentan-3-one illustrate?
3. Chiral carbon is also called -----
4. Name an aromatic homocyclic compound that conforms to a 14π electron system.
5. Macrocyclic poly ethers are known as -----
6. What is the product obtained when sodium ethoxide is heated with methyl bromide?
7. Hexamethylenetetramine is also known as -----
8. Sodium propionate upon heating with dry sodalime yields -----
9. ----- is the monomer of cellulose.
10. Menthol is obtained from ----- oil.

(10 x 1 = 10 Marks)

SECTION B

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

11. Which is more basic dimethylamine or trimethylamine? Why?
12. Define the terms conformation and configuration.
13. How can maleic acid be converted to fumaric acid?
14. Explain the electrophilic substitution reaction with an example.
15. How does benzene undergo sulphonation and what is the product obtained?
16. Which is more acidic- phenol or para nitro phenol? Justify.
17. Draw the chair conformation of cyclohexane.
18. Illustrate carbylamine reaction.
19. What is TNT? How is it prepared?

20. Define i) isoelectric point ii) zwitter ion

(7 x 2 = 14 Marks)

SECTION C

Answer any *four* questions. Each question carries 5 marks.

21. With the help of diagram discuss the optical isomerism of tartaric acid.
22. Explain the various methods used for the resolution of a racemic mixture.
23. Briefly explain the molecular orbital diagram of benzene.
24. Give an example for Friedal-crafts acylation and give its mechanism.
25. Explain DNA finger printing and discuss its applications.
26. What are essential oils? How are they isolated from their natural sources?

(4 x 5 = 20 Marks)

SECTION D

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

27. Discuss and illustrate the significance of the various electron displacement effects in organic molecules.
28. What is meant by an S_N1 reaction? Discuss its mechanism, kinetics and stereo chemistry with an example.
29. How can the following conversions brought about
 i) diethylether to C₂H₅I
 ii) Ethyl alcohol to chloroform
 iii) benzene to meta nitro aniline
 iv) Acetic acid to lactic acid
30. Discuss the primary, secondary and tertiary structure of proteins briefly.

(2 x 10 = 20 Marks)
