

18U319

(Pages: 2)

Name:

Reg. No.....

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

(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. What is the hybridization of carbon atom in a carbocation?
2. Internal compensation is shown by ----- types of compounds.
3. Nitro benzene directs the incoming substituent to ----- position.
4. Give two examples for non benzenoid aromatic compound.
5. Which metal is used in Wurtz reaction?
6. Give an example for crown ether.
7. NaNO_2 and HCl are used for the preparation of ----- from aniline.
8. The sugar group present in DNA is -----
9. What is the structure of Nicotine?
10. Picric acid is -----

(10 x 1 = 10 Marks)

SECTION B

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

11. Why TNT is explosive in nature?
12. Aliphatic aldehydes are more reactive than aromatic aldehydes. Why?
13. How carboxylic acid is prepared using a Grignard reagent?
14. Compare the harmful effect of methanol and ethanol on human body.
15. What is mutarotation?
16. What is DNA finger printing?
17. What are the products after the homolysis and hetrolysis of a C-C bond?
18. Give the preparation of ethanol from molasses.
19. Aniline is less basic than ammonia. Why?
20. Tropylium cation is an aromatic compound. Substantiate.

(7 x 2 = 14 Marks)

SECTION C

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

21. Explain the optical isomerism shown by lactic acid and tartaric acid.
22. Compare the acidity of ethanol and tert-butyl alcohol. What is haloform reaction?
23. a) What are globular and fibrous proteins?
b) Explain the denaturation of proteins.
24. Explain the double helical structure of DNA.
25. What is HVZ reaction and Kolbe electrolysis?
26. a) Compare the acidity of phenol, *p*-nitrophenol and *p*-methoxyphenol.
b) Give the preparation of phenolphthalein.

(4 x 5 = 20 Marks)

SECTION D

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

27. Give the mechanism of S_N1 and S_N2 reactions. Explain the effect of substrate and stereochemistry of the reactions.
28. Explain the types, hybridization and stability of carbocation, carbanions and free radicals. How the stability of carbocation affect the rate of nucleophilic substitution reaction in alkyl halides?
29. Compare the geometrical isomerism in but-2-ene and but-2-ene-1,4- dioic acid. What are the methods of distinguishing geometrical isomers?
30. Explain the mechanism of halogenation, nitration, sulphonation and FriedelCraft's reactions. What is the orientation effect of substituents in aromatic electrophilic substitution reaction?

(2 x 10 = 20 Marks)
