



GN-224

101340

V Semester B.Sc. Examination, December - 2019
(CBCS) (F+R) (2016-17 and Onwards)

CHEMISTRY
Organic Chemistry Paper - V

Time : 3 Hours

Max. Marks : 70

Instructions : (i) The question paper has **two** parts. Answer **both** the parts.
(ii) Draw diagrams and chemical equations wherever **necessary**.

PART - A

Answer **any eight** of the following questions. Each question carries **two** marks. **8x2=16**

1. Write the geometrical isomers of 2-butene.
2. Write R and S configurations of glyceraldehyde.
3. Explain Sandmeyer's reaction with an examples.
4. What are equivalent and non-equivalent protons in NMR spectroscopy ?
5. How is thiophene prepared from acetylene ?
6. Give any one method for the preparation of furan.
7. Write the Haworth structure of lactose.
8. Mention one use each for morphine and menthol.
9. State Isoprene rule.
10. Mention the number of signals in the NMR spectra of $\text{CH}_3\text{CH}_2\text{Cl}$.
11. What are auxochromes ? Give an example.
12. Give any one use of chloramphenicol and sulphanilamide.

P.T.O.

**PART - B**

Answer any nine of the following questions. Each question carries six marks.

13. (a) How do you distinguish between maleic acid and fumaric acid by cyclisation method? 4+2
(b) Write the E and z configurations of 1-bromo-2-chloroethene.
14. (a) Explain the optical activity of biphenyl derivatives with an example. 4+2
(b) Draw the conformers of decalin.
15. (a) Explain the chemical method of resolution of a racemic mixture. 4+2
(b) How acetaldehyde is converted to ethylamine? Give equation.
16. (a) What is Hinsbergs reagent? How is it used to distinguish between primary, secondary and tertiary amines? 4+2
(b) How is aniline prepared from nitrobenzene.
17. (a) How do you convert benzene diazonium chloride into : 4+2
(i) P-hydroxy azobenzene
(ii) Phenyl hydrazine? Give equations.
(b) What happens when indole is nitrated? Give equation.
18. (a) Discuss the general mechanism of electrophilic substitution of pyrrole. 4+2
(b) Discuss basic strength of piperidine and pyridine.
19. (a) Starting from methylheptenone explain the process of synthesis of citral. 4+2
(b) Write the structure of camphor.
20. (a) How is glucose converted into fructose? 4+2
(b) Write the structure of zingiberene.
21. (a) Write the synthesis of nicotine. 4+2
(b) Give one use each of ephedrine and atropine.
22. (a) What is chemical shift? TMS is used as reference compound in NMR Spectroscopy. Give reasons. 4+2
(b) Mention the type of bending modes of vibrations in IR Spectroscopy.
23. (a) Write the advantages of spectroscopic techniques. 4+2
(b) What is blue shift?
24. (a) Write the synthesis of indigo from aniline. 4+2
(b) What are tranquilizers? Give an example.
25. (a) What is chemotherapy? How are drugs classified based on treatment of diseases due to infection? 4+2
(b) Write two uses of dichlofenac.