



V Semester B.Sc. Examination, Nov./Dec. 2015  
(Old Scheme) (Prior to 2013-14)

CHEMISTRY - V  
Organic Chemistry

Time : 3 Hours

Max. Marks : 60

**Instructions :** The question paper has two Parts.  
**Both** the Parts should be answered.  
**Structures and equations** are to be given wherever necessary.

PART - A

Answer **any six** of the following questions. **Each** question carries **two** marks : (6x2=12)

1. Write the structure of an optically active compound with two stereogenic centres.
2. Mention the necessary conditions for the compounds to exhibit geometrical isomerism.
3. How is Benzenediazonium chloride converted into chlorobenzene ?
4. Write the structure of isoquinoline.
5. What are monosaccharides ? Give an example.
6. Give one medicinal use of  
i) Quinine      ii) Cocaine
7. What is meant by chemical shift ? How is it expressed ?
8. Mention the type of change that occur in molecules by the absorption of light in IR region.
9. What are direct dyes ? Give an example.
10. Briefly discuss Witt's chromophore auxochrome theory.

PART - B

Answer **any eight** of the following questions. **Each** question carries **six** marks : (8x6=48)

11. a) Explain biochemical methods of resolution. Mention its disadvantages.  
b) What are diastereoisomers ? Give an example. (4+2)
12. a) Discuss the optical activity of Biphenyl derivative.  
b) Define plane of symmetry with an example. (4+2)



13. a) Explain external and internal compensation.  
b) What are Chiral molecules. Give an example. (4+2)
14. a) Discuss the stereoisomerism of Lactic acid.  
b) How do you prove the presence of six membered ring in glucose using periodic acid ? (3+3)
15. a) Describe Hinsberg's test to distinguish between primary, secondary and tertiary amines.  
b) How is pyridine prepared ? (4+2)
16. a) Explain gabriel-phthalimide synthesis of methylamine.  
b) Write the nitration reaction of quinoline. (4+2)
17. a) Discuss the aromaticity of thiophene.  
b) Why is methylamine more basic than ammonia ? (4+2)
18. a) Write the principle and applications of NMR spectroscopy.  
b) Give Haworth structure of Maltose. (4+2)
19. a) What are the advantages of using spectroscopic method over conventional methods ?  
b) Write the structure of Limonene. (4+2)
20. a) Sketch the NMR spectra of Bromoethane. Indicate the multiplicity of the various peaks.  
b) How is dipole moment used to distinguish cis and trans-isomers ? (4+2)
21. a) Write the structure and IUPAC name of Isoprene.  
b) Explain spin-spin coupling.  
c) What is sandmeyer reaction ? (2+2+2)
22. a) Distinguish between soaps and detergents.  
b) What is chemotherapy ? (4+2)

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