

V Semester B.Sc. Examination, November/December 2018  
(Repeaters – Prior to 2016-17) (NS – 2013-14 and Onwards)

CHEMISTRY – V  
Organic Chemistry

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) The question paper has **two** Parts. Answer **both** the Parts.  
2) Draw diagrams and **chemical** equations **wherever** necessary.

PART – A

Answer **any eight** of the following questions. Each question carries **two** marks. (8×2=16)

B.M.S.C.W

1. What are enantiomers ? Give an example.
2. Write the geometrical isomers of 1, 2 – dimethyl cyclopropane.
3. What is Sandmeyer's reaction ? Give an example.
4. Write the Haworth structure of Sucrose.
5. Write the structure of R and S lactic acid.
6. What is chemical shift ?
7. Give one use of  $\beta$ -Carotene and menthol.
8. Write the structure of chloramphenicol and mention one use of it.
9. Write the structure of indigo and indicate chromophore present in it.
10. Explain the nitration of Quinoline.
11. Give any two principles of Green chemistry.
12. Draw the UV-spectra of 1, 3-butadiene and indicate the electronic transition involved.



## PART - B

Answer **any nine** of the following questions. **Each** question carries **six** marks. (9×6=54)

13. a) Discuss the optical isomerism in biphenyl compounds.  
b) Explain plane of symmetry with an example. (4+2)
14. a) Illustrate the terms 'external compensation' and 'internal compensation' with example.  
b) Give E and Z configuration of  $\text{CH}_3\text{CH}=\text{C}(\text{OH})\text{Cl}$ . (4+2)
15. a) Explain optical isomerism in lactic acid.  
b) Explain diazotisation with an example. (4+2)
16. a) Describe the synthesis of citral from 2-methylheptal one.  
b) How is the presence of pyridine ring in nicotine proved ? (4+2)
17. a) Discuss the aromaticity of furan.  
b) What happens when Isoquinoline is oxidised using alkaline  $\text{KMnO}_4$  ? Give the reaction. (4+2)
18. a) How is the ring size of glucose determined by periodic acid method ?  
b) Mention any two uses of Camphor. (4+2)
19. a) How is glucose converted into fructose ?  
b) What is mutarotation ? (4+2)
20. a) How are the following conversions brought about ?  
i) Benzene diazonium chloride to phenyl hydrazine  
ii) Benzene diazonium chloride to phenol.  
b) Account for the fact that  
"Aliphatic amines are stronger bases than ammonia". (4+2)



21. a) Enumerate the important advantages of employing spectroscopic methods for structure determination. (4+2)
- b) Mention the number of signals and multiplicity of signals in the NMR spectrum of  $\text{CH}_3\text{CH}_2\text{OH}$ . (4+2)
22. a) Write a note on effect of conjugation on the UV-spectra of organic compounds with an example. (4+2)
- b) Give the significance of finger print region in IR spectroscopy. (4+2)
23. a) Explain nuclear shielding and deshielding in NMR spectroscopy. (4+2)
- b) Why TMS is used as standard reference compared in NMR spectroscopy ? (4+2)
24. a) How is congo red synthesised ? (4+2)
- b) How pyridine is converted to 2-amino pyridine ? (4+2)
25. a) How is sulphanilamide synthesised ? (4+2)
- b) Write the structure of paracetamol and mention one use of it. (4+2)

**BMSCW**