

V Semester B.Sc. Examination, Nov./Dec. 2014
CHEMISTRY – V
(OS) (Prior to 2013-14)
(Organic Chemistry)

Time : 3 Hours

Max. Marks : 60

Instructions: 1) The question paper has **two** Parts.

2) Answer **both** the Parts.

PART – A

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

(6×2=12)

B.M.S.C.W

1. Define specific rotation of a substance.
2. How is dipole moment used to distinguish cis and trans isomers ?
3. How is benzene diazonium chloride converted into para-hydroxy azobenzene ?
4. Compare the basic strengths of pyrrole and pyridine.
5. Explain, why sucrose is a non-reducing sugar.
6. Give any one use of :
i) camphor, ii) limonene
7. Mention any two general characteristics of alkaloids.
8. Why TMS is used as reference compound in NMR spectroscopy ?
9. What is finger print region in IR spectrum ?
10. What are antibiotics ? Give an example.

PART – B

Answer **any eight** of the following questions. **Each** question carries **six** marks. (8×6=48)

1. a) Write the structures of the stereoisomers of tartaric acid. Identify the pairs of enantiomers and diastereomers in them.

b) Why meso compounds are optically inactive ?

(4+2)



12. a) Draw the structures of the geometrical isomers of 1, 4-dimethylcyclohexane. Which form is more stable and why ?
b) Write R and S configurations of lactic acid. (4)
13. a) Explain the chemical method of resolution with an example.
b) What is an erythro isomer ? Give an example. (4)
14. a) Explain Hinsberg test to distinguish primary, secondary and tertiary amines.
b) Give the reaction of : (3)
i) methyl amine and
ii) dimethyl amine with nitrous acid.
15. a) How is acetylene converted into
i) pyrrole and
ii) pyridine ?
b) What happens when indole is nitrated ? Give the equation. (4)
16. a) Describe the Skraup's synthesis of quinoline.
b) How is methyl amine prepared from acetamide ? (4)
17. a) How is fructose converted into glucose ?
b) Write the Haworth's structure of α -(D) - maltose. (4)
18. a) Describe the synthesis of citral from 6-methylhept-5-en-2-one.
b) How do you show the linkage between the carbon atoms in glucose ? (4)
19. a) Mention the heterocyclic rings present in nicotine.
b) How do you show that the nitrogen atoms in nicotine are tertiary ?
c) What is bathochromic shift ? (2+2)
20. a) Explain the NMR spectrum of bromoethane indicating the multiplicity of various peaks.
b) Mention the electronic transitions that take place when UV radiations are passed through acetone. (4)
21. a) Give the synthesis of malachite green.
b) What is chemotherapy ? (4)
22. a) Explain the cleansing mechanism of detergents.
b) How is paracetamol synthesised ? (3)