NS – 294

V Semester B.Sc. Examination, November/December 2016
(Repeaters Prior to 2016 – 17)
(NS – 2013-14 & Onwards)
Chemistry (Paper – 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 write chemical equations **wherever** necessary.*

PART – A

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

1. Explain centre of symmetry with an example.
2. What is finger print region in IR spectra ?
3. Write R and S configuration of 2-butanol.
4. Give one test to distinguish between 1°, 2° and 3° amines.
5. Explain Sandmeyer's reaction with an example.
6. Give two uses of morphine.
7. State isoprene rule.
8. How is furan prepared from furfural ?
9. What are tranquilizers ? Give an example.
10. Explain nitration of thiophene.
11. Write Haworth structure of β-D-glucose.
12. What are vat dyes ? Give an example.

P.T.O.

PART – B

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

13. a) What is resolution ? Explain chemical method of resolution.

    b) Describe cyclisation method of determining configuration of geometrical isomers. (4+2)

14. a) Write geometrical isomers of 1, 3-dimethyl cyclohexane. Which form is more stable and why ?

    b) Define the term molecular chirality. How is it related to optical activity ? (4+2)

15. a) Discuss optical isomerism in lactic acid.

    b) Write E and Z configuration of 1-bromo-2-chloropropene. (4+2)

16. a) How is methylamine prepared by Gabriel's phthalimide reaction ?

    b) What is diazotization ? Give an example. (4+2)

17. a) Compare the basic strength of methylamine, dimethylamine and trimethylamine on the basis of inductive effect.

    b) Compare the basic strengths of pyrrole and pyridine. (4+2)

18. a) Describe Fischer's method of synthesis of indole.

    b) Write the structure of quinoline. (4+2)

19. a) How do you determine the ring size of glucose by HIO_4 oxidation method ?

    b) What is a glycosidic bond ? (4+2)

20. a) Elucidate the structure of citral.

    b) Give the uses of α-terpineol. (4+2)

21. a) Describe the synthesis of nicotine.

    b) Give two medicinal uses of cocaine. (4+2)

22. a) Explain the effect of conjugation in UV spectra of organic compound with an example.

    b) What is chemical shift ? (4+2)

23. a) Explain nuclear shielding in NMR spectroscopy.

    b) What are auxochromes ? Give an example. (4+2)

24. a) How is malachite green synthesized from benzaldehyde ?

    b) What are antimalarials ? Give an example. (4+2)

25. a) Give the synthesis of paracetamol from phenol.

    b) Give the principles of green chemistry. (4+2)