SN – 337

V Semester B.Sc. Examination, Nov./Dec. 2017
(Semester Scheme)
(CBCS) (F+R) (2016-17 and Onwards)
CHEMISTRY – V
Organic Chemistry

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. **(8×2=16)**

1. Define centre of symmetry with an example.
2. What are mesocompounds ? Why they are optically inactive ?
3. How is aniline prepared from nitrobenzene ?
4. Explain 2° amines are more basic than 1° amines.
5. Explain chichibabin reaction.
6. Write the Haworth structure of α-maltose.
7. Piperidine is more basic than pyridine. Give reason.
8. Give the evidence to prove the presence of five hydroxyl groups in glucose.
9. What are auxochromes ? Give an example.
10. How is Furan prepared from Furfural ?
11. What are equivalent and non-equivalent protons in NMR spectroscopy ?
12. What are mordant dyes ? Give an example.

P.T.O.

PART – B

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

13. a) Write the stereo isomers of 2, 3 dichloro butane. Identify a pair of enantiomers and diastereomer's.
    b) Draw the conformers of 1,4 dimethylcyclohexane. (4+2)

14. a) How is Benzenediazonium chloride converted into
    i) Phenyl hydrazine ii) Phenol
    b) How is ethyl amine prepared by Gabriels Phthalimide synthesis ? (4+2)

15. a) Explain the optical activity of biphenyl derivatives with an example.
    b) Write R and S configuration of lactic acid. (4+2)

16. a) Discuss the aromaticity of Furan.
    b) What happens when nicotinic acid is heated ? (4+2)

17. a) What are epimers ? Give an example.
    b) Explain the conversion of fructose to glucose. (2+4)

18. a) Describe the synthesis of α-citral.
    b) Mention two uses of morphine. (4+2)

19. a) Give a reaction to show that nicotine has pyridine and pyrolidine ring system in its structure.
    b) Write the structure of camphor. (4+2)

20. a) Explain shielding and deshielding of protons in NMR spectroscopy.
    b) Mention the type of bending modes of vibrations in IR spectroscopy. (4+2)

21. a) i) What is spin-spin splitting ?
    ii) Why is TMS used as a reference compound in NMR spectroscopy ?
    b) Mention the electronic transition that takes place when uv radiations are passed through acetaldehyde. (4+2)

22. a) Write the advantages of spectroscopic techniques.
    b) Explain geometrical isomerism with an example. (4+2)

23. a) Write the synthesis of indigo from aniline.
    b) What are analgesics ? Give an example. (4+2)

24. a) Describe the synthesis of paracetamol from phenol.
    b) What are tranquillizers ? Give an example. (4+2)

25. a) Explain how the ring size of glucose in determined by HIO_4 oxidation method.
    b) What is diazotisation ? (4+2)