SN – 338

V Semester B.Sc. Examination, November/December 2017
(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 chemical equations* ***wherever*** *necessary.*

PART – A

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

1. Write the Haworth structure of α-maltose.
2. What is molecular chirality ?
3. Write the structure of Alizarin.
4. Give the R and S configuration for lactic acid.
5. What is a shielded proton in NMR spectroscopy ?
6. Mention one use each
   i) Atropine
   ii) Quinine
7. Explain Bathochromic shift.
8. Aniline is less basic than ammonia. Why ?
9. How is thiophene prepared from acetylene ?
10. Give the structure of camphor.

P.T.O.

11. Give the syn and anti isomers of benzaldoxime.

12. Write the necessary conditions for a molecule to exhibit geometrical isomerism.

PART – B

Answer **any nine** of the following questions. **Each** question carries **six** marks. (9x6

13. a) Write the stereoisomers of tartaric acid. Identify a pair of enantiomers and diastereomers.

    b) Write the E and Z isomers of 2 chloro-I-propenol. (4

14. a) Elucidate the ring structure and size of glucose by oxidation with periodic acid.

    b) What is mutarotation ? (4

15. a) Explain the aromaticity of furan on the basis of molecular orbital theory.

    b) What is Chichibabin reaction ? Write the equation. (4

16. a) i) Write the cis and trans isomers of but 2-ene 1, 4 dioic acid.

    ii) How do you distinguish the cis and trans isomers with the help of dipole moment ?

    b) Draw the two conformations of 1, 3 dimethyl cyclohexane. (4+

17. a) How are the following conversions effected.
    i) Acetaldehyde to ethylamine ?
    ii) Benzene diazonium chloride to P-hydroxy azobenzene ?

    b) Why is tertiary amine less basic than secondary amine ? (4+

18. a) How is malachite green synthesised ?

    b) What are vat dyes ? (4+2

19. a) How is paracetamol synthesised from phenol ?

    b) Mention one use of diclofenac and ranitidine. (4+2

20. a) Give the skraup synthesis of quinoline.

    b) Between pyridine and piperidine which is more basis and why ? (4+2)

21. a) Explain spin-spin coupling. Give the multiplicity of peaks in CH_3CH_2Cl.

    b) What is the significance of finger print region in IR spectroscopy ? (4+2)

22. a) Give the general characteristics of Alkaloids.

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

23. a) Explain the various electronic transitions of u.v. spectrum.

    b) Write the stretching modes of vibrations in IR spectra. (4+2)

24. a) Write the synthesis of congo red from benzidine.

    b) Mention one use of menthol and Limonene. (4+2)

25. a) Explain modern theory of colour and constitution of dyes.

    b) Mention two applications of green chemistry. (4+2)
