(Pages : 4) **J – 1845**

Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, March 2020

First Degree Programme under CBCSS

Chemistry

Core course XI

CH 1642 : ORGANIC CHEMISTRY III

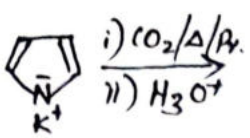
(2013–2016 Admissions)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions. Answer in **one** word or maximum **two** sentences. Each questions carries **1** mark.

1. What is meant by Buna–S?
2. Give the structure of alizarin.
3. Give one test to distinguish between primary and secondary amine.
4. Write down one application of diazonium salts.
5. Draw the structure on TNT.
6. Give the product of the following reaction



P.T.O.

7. Give the name and structure of a condensed heterocyclic compound.

8. How many fundamental vibrations are possible for toluene?

9. Define chemical shift.

10. What is meant by EIMS?

(10 × 1 = 10 Marks)

SECTION – B

Short answer type. Answer any **eight** question from the following. **Each** question carries **2** marks.

11. With example, explain red shift and blue shift.

12. Give two prominent peaks exhibited by acetone in it's IR spectrum. Assign them.

13. What is meant by α–cleavage in mass spectrometry?

14. How quinoline is prepared by Skraup synthesis?

15. How can we convert furan into phthalic anhydride?

16. What does it meant by green synthesis?

17. Explain carbyl amine reaction.

18. Give one method of preparation of p–toluene sulphonic acid.

19. What is sandmeyer's reaction?

20. With suitable examples, explain azo dyes.

21. What is meant by number average molecular mass of polymers?

22. How phenolphthalein is prepared?

(8 × 2 = 16 Marks)

SECTION–C

Short essay type. Answer any **six** questions from the following. Each question carries **4** marks.

23. Write down the structure of β–carotene. Why it is orange coloured. Explain.

24. Explain coordination polymerisation with examples.

25. Discuss in detail, Hofmann elimination reaction.

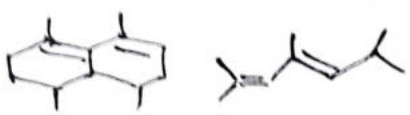
26. Write note on synthetiz importance of diazonium compounds.

27. Explain the classification of heterocyclic compounds. Give suitable examples.

28. How can we prepare ibuprofen from isobutylbenzene.

29. How IR spectroscopy is useful ion distinguishing o–nitrophenol and p–nitrophenol.

30. Using Woodward–Fieser ruler, educated the λ_{max} of the following two compounds.



31. Discuss Retro–Diels alder fragmentation pattern. How the following two compounds can be differentiated using mass spectra.



(6 × 4 = 24 Marks)

SECTION D

Answer any **two** questions. **Each** questions carries **15** marks.

32. (a) What are the factors affecting vibrational frequencies in infrared spectroscopy?

    (b) Write a note on spin–spin coupling and coupling constant in NMR spectroscopy.

33. With mechanisms, Explain the substitution reactions exhibited by indole, quinoline and isoquinoline.

34. Explain in detail, the preparations and reactions of nitroarenes and aminoarenes.

35. (a) Write a note on different types of polymerisation.

    (b) How comgored, malachite green and crystal violet are synthesized.

(2 × 15 = 30 Marks)
