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E – 1649

Reg. No. :

Name :

Sixth Semester B.Sc. Degree Examination, April 2018
First Degree Programme Under CBCSS
Chemistry
Core Course – XI
CH 1642 : ORGANIC CHEMISTRY – III
(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions. Answer in **one** word to maximum **two** sentences. **Each** question carries **one** mark.

1. What is meant by Zeigler-Natta catalyst ?
2. Give the structure of methyl orange.
3. Give one example for synthetic detergent.
4. Write down the structure of sulphadiazine.
5. What will be product, when nitrobenzene is reduced in basic medium.
6. Write the structure of ibuprofen.
7. What is the IUPAC name of pyridine ?
8. Acetone gives a peak at 279 nm in its electronic spectrum. Give the type of transition.
9. An organic compound with molecular formula C_5H_{12} , gives only one signal in its 1H NMR spectrum. What is the compound ?
10. In the mass spectrum, the peak with relative abundance 100 is called **(1×10=10 Marks)**



SECTION -- B

Short answer type. Answer **any 8** questions from the following. **Each** question carries **two** marks.

11. Referring two examples, make a statement on polymer composites.
12. Give one example each for nitro and nitroso dyes.
13. Explain ionic addition polymerisation mechanism, considering polymerisation of ethylene.
14. Give one characteristic reaction exhibited by nitro compounds.
15. Discuss the relative basicity of primary, secondary and tertiary amines.
16. What is meant by Benzidine rearrangement ?
17. State and explain atom economy.
18. Depict the structures of the products **A** and **B**.



19. What are the resonance structures of indole ?
20. Narrate the different types of electronic transitions.
21. What is meant by finger print region. Why it is called so ?
22. In ^{13}C NMR spectrum, the chemical shift values are expressed in the range _____. Give the natural abundance of ^{13}C isotope. **(8x2=16 Marks)**

SECTION – C

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

23. Write a note on bio-degradable polymers. Give suitable examples.
24. Discuss the colour of different dyes, especially based on chromophore-auxochrome theory.



25. Explain the preparations and applications of sulphanilamides.
26. Give any two synthetic applications of benzene diazonium chloride.
27. Write a note on medicinally important heterocyclic compounds.
28. Discuss the detail, the classification of various types of drugs.
29. How can we distinguish between the following two compounds using UV-Vis spectroscopy.



30. With suitable examples, explain any two factors that affect the IR absorption frequencies.
31. What is meant by Mc-Lafferty rearrangement ? How it is useful in distinguishing 2-heptanone and 3-heptanone. (6×4=24 Marks)

SECTION – D

Answer **any 2** questions. **Each** question carries **15** marks.

32. a) Sketch the ^1H NMR spectra of pure ethanol and impure ethanol. Explain the salient features.
b) Explain isotope effect in mass spectrometry.
33. a) Explain the twelve principles in green synthesis.
b) Give the limitations of green synthesis.
34. a) What are sulpha drugs ? How they are classified ?
b) Explain the preparations and uses of sulphathiazole and sulphaguanidine.
35. a) Discuss in detail the synthesis and applications of PMMA and Bakelite.
b) Give the synthesis of crystal violet. (15×2=30 Marks)