K24P 3088

Reg. No. : ....

Name : ....

III Semester M.Sc. Degree (C.B.C.S.S. – OBE-Regular) Examination, October 2024
(2023 Admission)
CHEMISTRY/CHEMISTRY WITH DRUG CHEMISTRY SPECIALIZATION
MSCHD03C13/MSCHE03C13 : Organic Chemistry – III

Time : 3 Hours

Max. Marks : 60

SECTION – A

Short answer questions. Answer **any five** questions and **each** carries **three** marks.

1. Distinguish between bathochromic shift and hypsochromic shift.

2. State and explain Beer-Lambert's Law.

3. Explain why aromatic protons are highly deshieled.

4. Explain spin-spin coupling.

5. Explain the significance of meta stable ions in mass spectrometry.

6. Explain a method for the preparation of thiepines. **(5×3=15)**

SECTION – B

Paragraph questions. Answer **any three** questions and **each** carries **six** marks.

7. Write a short note on DEPT and INEPT.

8. Explain any two methods for the simplification of complex NMR spectra.

9. Explain the instrumentation of FTIR.

10. Write briefly about the instrumentation of GCMS.

11. Explain the conversion of cholesterol to androsterone. **(3×6=18)**

SECTION – C

Essay type questions. Answer **any three** questions and **each** carries **nine** marks.

12. Explain the various factors influencing the vibrational frequencies of bonds.

13. Discuss about COSY, HMBC and HMQC spectra.

14. Explain any three ionisation techniques in mass spectrometry.

15. Discuss the structure, synthesis and biological activity of progesterone.

16. Illustrate Woodward-Fieser rules for calculating λ_{max} of enones.   **(3×9=27)**

_____