ADITYA DEGREE COLLEGES

ANDHRA PRADESH

VI SEMESTER - PREFINAL EXAMINATIONS

III B.Sc - CHEMISTRY CLUSTER-VIII(C1)

(Organic Spectroscopic Techniques)

Date:24-03-2020

Max. Marks : 75
Time : 3 Hours

SECTION - A

I. Answer any FIVE questions from the following **5X5= 25M**

1. Write about spin-spin relaxation.
2. Describe the factors influencing the coupling constant.
3. Explain about Deuterium exchange.
4. What are the applications of NMR spectroscopy in medical diagnostics ?
5. Explain franck-condon principle.
6. Explain wood-ward-fieser rules for unsaturated carbonyl compounds.
7. Explain Beer- lambert's law.
8. Explain ESR spectrum for methyl free radical $(\dot{C}H_3)$

SECTION - B

II. Answer ALL Questions **5X10=50M**

9. a) Explain the principle involved in NMR spectroscopy.

(OR)

b) Define chemical shift. What are the factors influencing chemical shift.

10. a) Explain Nuclear overhauser effect.

(OR)

b) What is FT NMR ? What are the advantages of it ?

11. a) Write about Born-oppenheimer approximation.

(OR)

b) Explain different types of electronic transitions in UV & Visible spectroscopy.

12. a) How is Beer-lambert's law useful in quantitative determination of Mn(II) and Fe(II)

(OR)

b) Give the experimental procedure of simultaneous determination of chromium and manganese in a mixture using Beer-lambert's law.

13. a) Explain the principle involved in ESR spectroscopy.

(OR)

b) Explain hyper fine splitting in ESR spectroscopy.