

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 08

M.Tech. (Bio Tech.) EL-I (2018 Batch) (Sem.-1)

BIOANALYTICAL TECHNIQUES

Subject Code : MTBT-106-18

M.Code : 75766

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.

2. Each question carries TWELVE marks.

1.
 - a. Explain the different Modes of Molecular Vibrations, sample handling and applications of IR Spectroscopy.
 - b. Discuss Bragg's law, types of crystals and applications of X-ray diffraction.
2. Explain in detail the theory and instrumentation of NMR spectrometer.
3.
 - a. Write the principle of Magnetic Resonance Imaging (MRI) and explain its applications.
 - b. Describe the principle and instrumentation of double beam Infrared Spectrophotometer.
4.
 - a. Explain in detail the theory and instrumentation of Transmission Electron microscope and its applications.
 - b. Explain in detail with examples the fragmentation pattern of organic compounds by mass spectroscopy.
5. Write short notes on the following :
 - a. Free Induction decay
 - b. Sample handling techniques in IR
 - c. Diamagnetic Shielding
 - d. Geiger-Muller counter
 - e. X-ray diffraction
 - f. Radiotracers

6.
 - a. Explain Ultra Centrifugation and its underlying principal. Write about the different applications of ultra-centrifugation.
 - b. Explain the principle and applications of radio scintillation counters.
7.
 - a. Explain the different types of electronic transitions involved in UV Spectroscopy.
 - b. Explain the principal of GC-MS and its applications.
8.
 - a. Explain the different interferences in Atomic absorption spectrophotometry and its applications.
 - b. Write about Chemical shift and spin-spin coupling and add a note on the factors influencing them.

www.FirstRanker.com

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.