



# VIT<sup>®</sup>

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

School of Bio-Sciences and Technology

Fall Semester (2023-24), CAT-II

Course Code : BBIT303L

Duration : 90 Minutes.

Course Name : Genomics and Proteomics

Max. Marks : 50

Course Faculty : Dr. S. Jayanthi / Dr. R. Sudesh / Dr. G. Sunantha

Slot : D1+TD1/ D2+TD2

Class number: 0148/0149/0152/0153/0155

Answer ALL the questions: (5X10=50)

1. X-ray crystallography and NMR contain complementary information for the structural characterization of biological macromolecules. Justify the above statement in detail.
2. a) Why peptides are better choice than proteins in MS analysis?(4 Marks)  
  
b) You are given a sample protein sequence below. List down the resulting peptides followed by digestion with trypsin. Also write a note on cleavage specific proteases with examples.(6 Marks)

RLVEVALGKIGGANTRGYEVALVNTKFWMCMSMVALPGMSWFRH

3. Discuss on the analytical challenges faced in proteomics and how the development of tools helped to overcome these challenges.
4. What are the different protein separation techniques used in proteomics? Justify their importance and bottle neck it creates in the growth of proteomics.
5. Describe in detail the method of forward genetic approach which uses random mutagenesis.

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