Printed Pages: 3 **NBT-603**

(Following Paper ID and Roll No. to be filled in your Answer Books)	
Paper ID : 154613	**Roll No.**

B. TECH.

Theory Examination (Semester-VI) 2015-16

BIOINFORMATICS-II

Time : 3 Hours ***Max. Marks : 100***

Section-A

1. Attempt all parts. All parts carry equal marks. Write answer of each part in short. (2 × 10 = 20)

(a) What is genomic sequence annotation? Give some tools for Gene and ORF prediction.

(b) What is Microarray? How bioinformatics is applied to analyse microarray data?

(c) What is machine learning? Name some machine learning approaches.

(d) What is a Decision Tree? Give example.

(e) What is computer simulation?

(f) Describe the relation between statistics and machine learning.

(g) Explain the technique of Document clustering.

(h) What is Lipinski's rule of five in insilico drug designing?

(i) What is the diffemce between Parametric and Non-Parametric tests?

(j) Explain Perl? What are Arrays, Hashes in Perl ?

Section-B

2. Attempt any five parts. All parts cany equal marks : (10×5=50)

(a) What is simulated annealing ?

(b) How is Artificial Neural Network helpful in solving biological problems?

(c) Discuss and describe the Genetic Algorithm.

(d) Explain Natural Language Processing. Discuss its major areas.

(e) Describe computer simulation techniques and its types.

(f) Explain Pharmacodynamics (Efficacy & Potency) & Pharmacokinetics (ADME).

(g) Explain the methods of clustering (Hierarchical and K-mean).

(h) Describe Hidden Markov Model and one of its application.

Section-C

Note : Attempt any two questions from this section. (15×2=30)

3. Describe and discuss some molecular biology techniques and their inference problems solved by the help of bioinformatics.

4. What is force field in molecular modeling? How is it helpful in study of molecular dynamic simulation? .

5. What is in silico drug designing? Explain Ligand and Structure based drug designing.