No. of Printed Pages : 03 **Roll No. .....**

H-121

B. Tech. EXAMINATION, Dec. 2017

(Eighth Semester)

(B. Scheme) (Re-appear Only)

(BT)

BT-402-B

DNA MICROARRAY TECHNOLOGY

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Describe in detail the principle, procedure and applications of DNA microarray technology. **15**

2. Write short notes on the following : **3×5=15**

(a) Image analysis

(b) Normalization

(c) Expression indices and fold change.

Unit II

3. What is cluster analysis ? Discuss its biological and functional significance. Differentiate between the two major forms of cluster analysis. **15**

4. Write notes on the following :

(a) Data mining for function prediction and for searching regulatory elements in promoter regions. **8**

(b) Selforganizing maps and distance measures. **7**

Unit III

5. With the help of suitable examples, explain the two different approaches use for studying the regulatory network among the different genes. Also discuss the limitations of network modelling. **15**

6. What do you understand by molecular classifiers ? Explain its significance in the field of medicine. **15**

Unit IV

7. Write notes on the following : **3×5=15**

(a) Factorial design and two channel arrays

(b) Hypothesis driven experiments and independent verification

(c) Limitations of expression analysis.

8. Explain in detail the different types of software packages related to DNA microarray technology. **15**