

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – WINTER 2013

Subject Code: 170405**Date: 03/12/2013****Subject Name: Genomics and Proteomics****Time: 10:30 TO 01:00****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is genomics? Discuss various branches of genomics. **07**
(b) Define proteome and proteomics. Comment on different branches of proteomics. **07**

- Q.2** (a) Explain the packing of nuclear DNA in eukaryotes. **07**
(b) Comment on prokaryotic genome organization. **07**

OR

- (b) Comment on human genomic variations. **07**

- Q.3** (a) Comment on natural gene circuits. Briefly explain the concept of synthetic biology. **07**
(b) Briefly describe specialized nucleotide databases. **07**

OR

- Q.3** (a) Discuss various gene prediction methods and tools. **07**
(b) Comment on the construction and applications of EST. **07**

- Q.4** (a) Define DNA microarray and comment on the construction and applications of DNA microarray for healthcare applications. **07**
(b) Describe Serial Analysis of Gene Expression (SAGE). **07**

OR

- Q.4** (a) Describe principle, procedure and applications of 2D-PAGE. **07**
(b) Describe principle, procedure and applications of Mass Spectroscopy technique used in proteomics. **07**

- Q.5** (a) What is protein microarray? Comment on the construction and applications of protein microarray. **07**
(b) Describe the principle, procedure and applications of Rational Drug Designing. **07**

OR

- Q.5** (a) Comment on protein structure prediction and visualization. **07**
(b) Comment on protein modeling, docking and simulation. **07**
