

GUJARAT TECHNOLOGICAL UNIVERSITY**MCA - SEMESTER-V • EXAMINATION – WINTER 2013****Subject Code: 650015****Date: 30-11-2013****Subject Name: Bioinformatics****Time: 02.30 pm - 05.00 pm****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 transcription? Write the genetic code is the code that translates DNA into protein **07**

(b) Write down the important features of GenBank. Point out that the GenBank search interface is nearly identical to the PubMed search interface. **07**

Q.2 (a) Write note on Boolean searching of biological research data over the web. **07**

(b) Write note on the observations of Watson and Crick's model of DNA. **07**

OR

(b) What is Bioinformatics? How computer changing the biology? **07**

Q.3 (a) Explain by example three pairwise sequence alignments generated using ALIGN program. **07**

(b) List and explain benefits of using computational tools in biology. **07**

OR

Q.3 (a) What is multiple sequence alignment process? How many parameters involved in multiple sequence alignment. Explain in detail **07**

(b) Explore the structure and menu of link by PDB tools. **07**

Q.4 (a) How sequence alignment works? Compare the sequences of *eyeless* and *aniridia* with BLAST. **07**

(b) Explain in details two approaches in computational modeling of protein structure **07**

OR

Q.4 (a) What Does Informatics Mean to Biologists? What Skills Should a Bioinformatician Have? **07**

(b) Explain and explain six of the most commonly used methods. **07**

Q.5 (a) Explain the process of schematic replication of one strand of the DNA helix. **07**

(b) Write down in detail two popular strategies for sequencing genomes **07**

OR

Q.5 (a) List the three types of databases? Explain Object-Oriented DBMS in detail. **07**

(b) List the some general questions about data integrity. **07**
