Seat No.: \_\_\_\_\_ Enrolment No.\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

| -     |              | MCA - SEMESTER-V • EXAMINATION – WINTER • 20 ode: 2650015 Date: 08-12 ome: Bioinformatics                          |           |  |
|-------|--------------|--|-----------|--|
| · ·   |              |  | Marks: 70 |  |
| nstru | 1. A<br>2. M | ttempt all Questions.<br>Take suitable assumptions wherever necessary.<br>igures to the right indicate full marks. |           |  |
| Q.1   | (a)          | What is Bioinformatics? Explain the first information age in biology.  | 07        |  |
|       | <b>(b)</b>   | Describe molecular central dogma with diagram  | 07        |  |
| Q.2   | (a)          | Explain Data Annotation and data formats.  | 07        |  |
|       | <b>(b)</b>   | Explain pairwise seQ.nce comparison in detail  | 07        |  |
|       |              | OR   |           |  |
|       | <b>(b)</b>   | Explain motifs and profiles with examples.   | 07        |  |
| Q.3   | (a)          | Write a short note on:   |           |  |
|       |              | 1.Genbank<br>2.Gap penalty   | 04<br>03  |  |
|       | <b>(b)</b>   | Explain Blast algorithm in detail.   | 07        |  |
|       |              | OR   |           |  |
| Q.3   | (a)          | What is phylogenetic tree? Explain types of phylogenetic tree in detail.   | 07        |  |
|       | <b>(b)</b>   | Explain protein resource database in detail.   | 07        |  |
| Q.4   | (a)          | Describe SCOP, CATCH and UNIQ. protein structured data set.  | 07        |  |
|       | <b>(b)</b>   | Explain motifs and profiles with examples.   | 07        |  |
|       |              | OR   |           |  |
| Q.4   | (a)          | Define Data mining. Explain data mining techniQ.s.   | 07        |  |
|       | <b>(b)</b>   | List out and explain the types of database.  | 07        |  |
| Q.5   | (a)          | Explain Swiss port, GV, Xgobi with examples.   | 07        |  |
|       | <b>(b)</b>   | Write a short Note on:   |           |  |
|       |              | 1.PAM and BLOSUM<br>2.CGI  | 04<br>03  |  |

Q.5 (a) List and explain all SQL commands in detail.
(b) Explain Transcription of DNA with diagram.
07

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