Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE - SEMESTER–VII • EXAMINATION – WINTER • 2014**

**Subject Code: 170406** **Date: 29-11-2014**

**Subject Name: Bio Informatics**

**Time: 10:30 am - 01:00 pm** **Total Marks: 70**

**Instructions:**

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

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|---|---|---|---|
| **Q.1** | **(a)** | Explain Homology modeling with all steps. | **07** |
| | **(b)** | What is the importance of progressive alignment for evolutionary studies? | **07** |
| **Q.2** | **(a)** | Discuss *GOR –IV* and *Chau-Fasman* methods of protein structure predictions. | **07** |
| | **(b)** | State the applications of Bio Informatics in various fields. | **07** |
| | | **OR** | |
| | **(b)** | How bioinformatics helps in drug discovery? | **07** |
| **Q.3** | **(a)** | What are the methods of building phylogenic trees? Compare all of them over each other keeping in view its efficiency. | **07** |
| | **(b)** | Give the main features of DBGET and SRS. | **07** |
| | | **OR** | |
| **Q.3** | **(a)** | Where and how global and local alignements differ? Explain. | **07** |
| | **(b)** | Justify the statement: "Simulation facilitates molecular docking". | **07** |
| **Q.4** | **(a)** | Explain CLUSTALW/X and compare it with BLAST and FASTA. | **07** |
| | **(b)** | Elaborate on Computer-aided Drug designing. | **07** |
| | | **OR** | |
| **Q.4** | **(a)** | Define networking. Mention the role of TCP/IP protocol. | **07** |
| | **(b)** | State clearly how and where does multiples sequence alignements help? | **07** |
| **Q.5** | **(a)** | How do the functions of proteins can be predicted? | **07** |
| | **(b)** | Write a note on any one of specialized genome database. | **07** |
| | | **OR** | |
| **Q.5** | **(a)** | Mention about the difficulties in molecular modeling. | **07** |
| | **(b)** | Define: conserved domains, paralogous sequence, cladogram, rooted tree, genomics, evolution, motifs. | **07** |

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