Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **14BT3005** | **Duration :** | **3hrs** |
| **Sub. Name :** | |  |  | | --- | --- | | **COMPUTATIONAL BIOLOGY** |  | | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Illustrate the geometry of polypeptide chain. | CO1 | 10 |
| b. | Explain the structural arrangement, turns, features and types of secondary structures of protein molecule. | CO1 | 10 |
| (OR) | | | | |
| 2. |  | Discuss in detail purpose, characteristics and classification of bioinformatics databases. | CO1 | 20 |
|  |  |  |  |  |
| 3. | a. | Illustrate and write the significance of Ramachandran plot. | CO1 | 10 |
| b. | Give a detailed account on features and file formats of PDB. | CO1 | 10 |
| (OR) | | | | |
| 4. |  | Explain the importance of genomic map elements and its implementation in various types of genome maps. | CO2 | 20 |
|  |  |  |  |  |
| 5. | a. | Write a short note on vector graphics versus rastor graphics. | CO2 | 5 |
| b. | Establish and explain the procedure for graphical representation of molecular models. | CO2 | 15 |
| (OR) | | | | |
| 6. |  | Discuss in detail different patterns and binding domains in macromolecular interactions with suitable illustrations. | CO2 | 20 |
|  |  |  |  |  |
| 7. |  | Explain gene prediction methods in prokaryote and eukaryote genomes. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Define an example on your own and explain about any two protein prediction algorithms. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Illustrate the terminology of phylogenetic tree. | CO3 | 5 |
| b. | Define an example on your own and construct a phylogenetic tree using distance matrix method. Write the procedure of distance based approach. | CO3 | 15 |