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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **15BI3002** | **Duration :** | **3hrs** |
| **Sub. Name :** | **COMPUTATIONAL GENOME AND PROTEOME ANALYSIS** | **Max. marks :** | **100** |

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

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| **Q. No.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | Discuss about the working environment and features of python programming. Explain the benefits of using python modules for genome and proteome analysis. | CO1 | **20** |
| **(OR)** | | | |
| 2. | Write biopython script to compute the following:  i)Reverse complement of nucleotide sequences ii) Transcription  iii) Translation tables iv) Comparing sequence objects | CO1 | **20** |
| 3. | How do you parse and extract biological data from fasta and genbank file formats? Explain it with suitable examples. | CO1 | **20** |
| **(OR)** | | | |
| 4. | Show procedures for retrieving information from Entrez database. Explain all possible methods and features of Entrez module. | CO2 | **20** |
| 5. | Explain the functions of Bio.Alphabet and Bio.SeqUtils packages. Give an example for each module. | CO2 | **20** |
| **(OR)** | | | |
| 6. | Write a biopython script to construct phylogram tree with all the features. Example should contain read/write various file formats and parsing multiple files. | CO2 | **20** |
| 7. | Generate plot representation using matplot view for the following analysis:  i)Distribution of sequence length for the given dataset.  ii)Frequency of CpG island. | CO3 | **20** |
| **(OR)** | | | |
| 8. | Elaborate on microarray data analysis using data mining techniques. | CO3 | **20** |
|  | **Compulsory:** |  |  |
| 9. | Animate a genome diagram using graphics module and explain about different file formats and methodology for constructing genome diagram. | CO3 | **20** |

ALL THE BEST