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 :** | **15BI3014** | **Duration :** | **3hrs** |
| **Sub. Name :** | **R PROGRAMMING** | **Max. marks :** | **100** |

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

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| **Q. No.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | Write R script to develop a data frame for a biological data set. Example should contain atleast 5 rows and 5 columns and also discuss about the characteristics and benefits of using data frame. | CO1 | 20 |
| (OR) | | | |
| 2. | Explain the following with description , syntax and suitable examples:  i) Function definition ii) User defined functions iii) Calling a function by position and by name iv) Lazy evaluation of a function | CO1 | 20 |
| 3. | How do you predict a variable using linear regression model? Explain the steps to establish linear regression using R script. | CO1 | 20 |
| (OR) | | | |
| 4. | Show how operator act on each element of a vector and explain the various types of operators used in R script with syntax and suitable examples. | CO2 | 20 |
| 5. | Write R script to develop an three dimensional pie chart with all possible features and parameters. Pie chart should contain atleast ten pieces. | CO2 | 20 |
| (OR) | | | |
| 6. | For the given data set how do you generate bar chart, group bar chart and stacked bar chart using R module. All the chart should contain label, title and multiple colors. | CO2 | 20 |
| 7. | Define clustering. Show procedure for analyzing microarray data of yeast cell cycle using clustering and visualization techniques in R programming. | CO2 | 20 |
| (OR) | | | |
| 8. | Explain how Bioconductor module is used for identifying copy number variation in next generation sequence data. | CO3 | 20 |
| **Compulsory:** | | | |
| 9. | Explain the working environment of Chemmine package. Discuss in detail how it is used to analyze drug like small molecular data. | CO3 | 20 |

ALL THE BEST