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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **14BI2019** | **Duration :** | **3hrs** |
| **Sub. Name :** | **R PROGRAMMING** | **Max. Marks :** | **100** |

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

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Give a detailed account on various types of operators and show the effect of operators act on each element of R vector with syntax and suitable examples. | CO1 | 20 |
| (OR) | | | | |
| 2. |  | Create a data frame for biological data set containing atleast six attributes. Show syntax and examples of all possible features and characteristics of a data frame. | CO1 | 20 |
|  |  |  |  |  |
| 3. |  | Explain the following with syntax and examples a) Function components b) User defined function c) Calling a function d)Lazy evaluation of a function. | CO1 | 20 |
| (OR) | | | | |
| 4. | a. | Write a short note on installing new R packages from external environment. | CO2 | 5 |
| b. | Write an R script to read, write and analyze a csv file format. | CO2 | 15 |
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| 5. | a. | Create a boxplot for any given distributed data and explain the features of boxplot function. | CO2 | 15 |
| b. | Write a short note on hist() function. | CO2 | 5 |
| (OR) | | | | |
| 6. | a. | Develop a group bar chart and stacked bar chart by defining an own example data set. Show all features of bar chart in the script. | CO2 | 10 |
| b. | Write R script to draw a multiline graph and show comments for the script. | CO2 | 10 |
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| 7. |  | Chemical mining of compounds and QSAR studies carried out using biopackages in R – Explain. | CO3 | 20 |
| (OR) | | | | |
| 8. |  | Show the steps to establish linear regression models using R script. Discuss on visualization of regression graphically. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Write an R script for the following sequence analysis a) Sequence composition b) GC content c) Amino acid frequencies  d) Pattern count. | CO3 | 20 |