

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



# Karunya 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

Code : 15BI3014  
Sub. Name : R PROGRAMMING

Semester : 2016-17 ODD  
Duration : 3hrs  
Max. marks : 100

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

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	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.	a.	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.	a.	How do you predict a variable using linear regression model.Explain the steps to establish linear regression using R script.	CO1	20
(OR)				
4.	a.	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.	a.	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.	a.	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.	a.	Define clustering. Show procedure for analyzing microarray data of yeast cell cycle using clustering and visualization techniques in R programming.	CO2	20
(OR)				
8.	a.	Explain how Bioconductor module is used for identifying copy number variation in next generation sequence data.	CO3	20
<b><u>Compulsory:</u></b>				
9.	a.	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