GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Fifth Semester Regular) Examinations, December – 2023

21BCDPE35001 – R for Data Science

(CSE (DS))

Time: 3 hrs   Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART – A   **(2 x 5 = 10 Marks)**

	Q.1. Answer *ALL* questions	CO #	Blooms Level
a.	List out various applications of R.	CO1	K1
b.	How do you access the elements in the 2nd column and 4th row of a matrix?	CO1	K4
c.	Write a short note on taking input printing output in R..	CO2	K1
d.	List out the packages required for ANCOVA.	CO2	K3
e.	Write a short note on Layer in grammar of graphics.	CO4	K1

PART – B   **(15 x 4 = 60 Marks)**

	Answer *ALL* questions	Marks	CO #	Blooms Level
2. a.	Write a R program to create a 3x3 matrix and do the following operations: Matrix addition, Matrix subtraction, Matrix multiplication and Matrix Division	10	CO1	K6
b.	How to setup and install R-Environment on various platforms?	5	CO1	K2
	(OR)			
c.	Create R code for the following operations and explain each and every code with hashtag. i). Subsetting a Vector ii). Subsetting a Matrix iii). Subsetting Lists iv). Removing NA Values	10	CO1	K6
d.	Briefly explain Decision Making statements in R.	5	CO1	K2
3.a.	Write a R code to check the following: i) Check available R packages ii) Get the list of all packages installed iii) Install new package iv) Install package manually	10	CO2	K3
b.	Write a R program to add a new item g4 = "Python" to a given list. g1=1:10, g2="R Program", g3="HTML".	5	CO2	K2
	(OR)			
c.	Briefly discuss about the following functions in R programming and create programme for justification: print(), paste(), paste0(), sprintf(), cat(), message() and write()	10	CO2	K3
d.	Briefly discuss about connection interfaces in R.	5	CO2	K2
4.a.	Let's create the following vectors: u = 4 v = 8 Use the elementary arithmetic operators +, -, *, /, and ^ to:	10	CO3	K6

	i). add u and v ii). subtract v from u iii). multiply u by v iv). divide u by v v). raise u to the power of v			
b.	Explain the process of reading, analysing the CSV File and writing into a CSV File in R.	5	CO3	K2

<div align="center">(OR)</div>

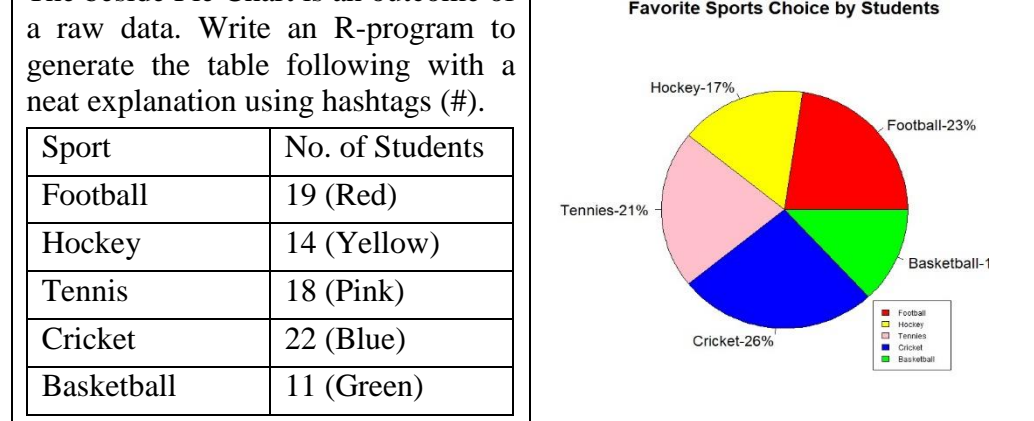|				
c.	Perform the following operation in data frame: i). Write a R program to add a new column in a given data frame. ii). Write a R program to add new row(s) to an existing data frame. iii). Write a R program to drop column(s) by name from a given data frame. iv). Write a R program to drop row(s) by number from a given data frame. v). e. Write a R program to create inner, outer, left, right join(merge) from given two data frames	10	CO3	K6
d.	Briefly explain the following: i). Creating XML file ii). Reading XML File iii). Extracting information about the XML file iv). Conversion of XML to dataframe	5	CO3	K2
5.a.	The beside Pie Chart is an outcome of a raw data. Write an R-program to generate the table following with a neat explanation using hashtags (#).	10	CO4	K6

Favorite Sports Choice by Students

Sport	No. of Students
Football	19 (Red)
Hockey	14 (Yellow)
Tennis	18 (Pink)
Cricket	22 (Blue)
Basketball	11 (Green)

Hockey-17%
Football-23%
Tennies-21%
Basketball-1
Cricket-26%

Football
Hockey
Tennies
Cricket
Basketball

b.	Define Line Graph. Briefly discuss about syntax for creating line graph.	5	CO4	K2

<div align="center">(OR)</div>

c.	Write R code for creating line graph on the following vector. V1=c(16,18,21,10,8,25,40,30,15,10) V2=c(9,21,19,12,10,15,30,45,40,25) with the following parameters. Show the output of each type (p,l,o) and explain with hashtags. i). Title of the chart ii). x-axis iii). y-axis iv). Type (p,l,o) v). colour	10	CO4	K6
d.	Define Boxplot. Briefly discuss about syntax for creating boxplot	5	CO4	K2

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