Code No: R1621051 **R16** SET - 1

II B. Tech I Semester Regular/Supplementary Examinations, October/November - 2019
STATISTICS WITH R PROGRAMMING
(Com to CSE & IT)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	Discuss about variables in R.	(3M)
	b)	Give an example for returning complex objects.	(3M)
	c)	Describe write.table() function.	(2M)
	d)	Explain about lowess() and loess() functions.	(2M)
	e)	Write the formula for weighted.mean.	(2M)
	f)	What are linear models supported by glm?	(2M)

PART -B

2.	a)	What is R programming? How to run R?	(7M)
	b)	Discuss about vectors in R with examples.	(7M)
3.	a)	Explain about return values in R programming.	(7M)
	b)	Describe implementation of binary search tree using R routines.	(7M)
4.	a)	What are set operations in R? Explain with examples.	(7M)
	b)	Explain about sort() and order() functions with examples.	(7M)
5.	a)	Discuss about points() and legend() functions.	(7M)
	b)	What are graphic explicit functions? Explain.	(7M)
6.	a)	What is Poisson distribution? Explain with examples.	(7M)
	b)	Explain concepts of correlation and covariance with examples.	(7M)
7.		Explain the following:	
	a)	Poisson regression	(7M)
	b)	Decision trees	(7M)

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Code No: R1621051 **R16** SET - 2

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Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	Describe mean and sd functions with examples.	(3M)
	b)	What are basic R operators?	(3M)
	c)	Define text file and binary file.	(2M)
	d)	Explain about the cex option.	(2M)
	e)	Write the formula for Chi-Squared.	(2M)
	f)	What is random forest?	(2M)

PART –B

2.	a)	Discuss in detail about matrices in R with examples.	(7M)
	b)	What are various data types used in R? Explain in detail with examples.	(7M)
3.	a)	Describe Quicksort implementation using recursion.	(7M)
	b)	How R programming manages without pointers? Explain with examples.	(7M)
4.	a)	What are functions for statistical distributions? Explain.	(7M)
	b)	Explain about connections in R with example.	(7M)
5.	a)	Discuss in detail about xlim and ylim options with examples.	(7M)
	b)	Give an example for two destiny estimates on the same graph.	(7M)
6.	a)	Explain about statistical distributions and their functions.	(7M)
	b)	Discuss about one-sample T-test with example.	(7M)
7.		Explain the following:	
	a)	Multiple regression	(7M)
	b)	Logistic regression	(7M)

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Code No: R1621051 **R16** SET - 3

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Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	Describe rbind() and cbind() functions.	(3M)
	b)	Explain about looping over nonvector sets.	(3M)
	c)	Discuss about rank() function.	(2M)
	d)	How to start a new graph while keeping the old ones?	(2M)
	e)	Write the formula for cumulative distribution function.	(2M)
	f)	What is an alternative to run an ANOVA test?	(2M)

PART –B

2.	a)	Explain the following sentence: “Functions in R have(almost) no side effects”.	(7M)
	b)	How to do math in R? Explain with examples.	(7M)
3.	a)	Describe Binary search implementation using recursion.	(7M)
	b)	Discuss about loops in R programming with examples.	(7M)
4.	a)	Explain about finding stationary distributions of Markov chains.	(7M)
	b)	Describe usage of scan() and readline() functions with examples.	(7M)
5.	a)	Discuss about saving graphs to files.	(7M)
	b)	Explain about text() and locator() functions with examples.	(7M)
6.	a)	Write formulas, means and variances for various statistical distributions.	(7M)
	b)	What is ANOVA? Explain with examples.	(7M)
7.		Explain the following:	
	a)	Splines	(7M)
	b)	Survival analysis	(7M)

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Code No: R1621051 **R16** SET - 4

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Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	Explain about apply() and sapply() functions.	(3M)
	b)	Explain if-else statement with example.	(3M)
	c)	Distinguish between min() and pmin() functions.	(2M)
	d)	Discuss about a polygon() function.	(2M)
	e)	What is Gaussian distribution?	(2M)
	f)	Define multiple regression.	(2M)

PART -B

2.	a)	Explain about elementwise operations on vectors with examples.	(7M)
	b)	Discuss about few important R data structures.	(7M)
3.	a)	Describe the following statement: “Functions are objects”	(7M)
	b)	What is recursion? Explain recursion concept with example.	(7M)
4.	a)	Give an example for combinatorial simulation.	(7M)
	b)	Describe linear algebra operations on vectors and matrices.	(7M)
5.	a)	Explain about plot() and abline() functions with examples.	(7M)
	b)	Give an example for magnifying a portion of a curve.	(7M)
6.	a)	Define binomial distribution. Explain with suitable example.	(7M)
	b)	Explain about paired two-sample T-Test with example.	(7M)
7.		Explain the following:	
	a)	Simple linear regression	(7M)
	b)	Decision trees	(7M)

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