

Enrollment No.....



Faculty of Science / Engineering

End Sem Examination Dec-2023

OE00051 R Programming

Programme: B. Sc./B.Tech./MCA

Branch/Specialisation: All

Duration: 3 Hrs.**Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. Which programming language is dialect of R Programming? **1**
 (a) B (b) C (c) S (d) K
- ii. Which of the following describes R Language? **1**
 (a) Paid (b) Free
 (c) Available for free trial only (d) Testing
- iii. What is the function to set row names for a data frame? **1**
 (a) row.names()
 (b) colnames()
 (c) col.names()
 (d) columns names can not be set for data frame
- iv. What is the length of b? **1**
 $b \leftarrow 2:7$
 (a) 5 (b) 6 (c) 7 (d) 8
- v. What will be the output of following code? **1**
`x <- 1:5`
`for (val in x) {`
`if (val == 3){`
`break`
`}`
`print(val)`
`}`
 (a) [1] 1 (b) [1] 1 (c) [1] 1 (d) [1] 1.
 [1] 2 [1] 2 [1] 2 [1] 2
 [1] 3 [1] 3 [1] 4
 [1] 4 [1] 5
 [1] 5

[2]

- vi. How many numbers of class system supported by R Programming? **1**
 (a) 1 (b) 2 (c) 3 (d) 4
- vii. Which function will you use for reading CSV file? **1**
 (a) write.csv () (b) read.csv ()
 (c) write.table () (d) None of these
- viii. read.table () creates- **1**
 (a) List (b) Matrix (c) Data frame (d) None of these
- ix. Which of the following packages of R language contains graphical functions? **1**
 (a) Statistics (b) Grid (c) Stats4 (d) Methods
- x. Which of the following functions creates a histogram? **1**
 (a) plot () (b) pairs () (c) boxplot () (d) hist ()
- Q.2 i. What are the features of R Programming? **2**
 ii. Define seq () function with example. **3**
 iii. What do you mean by vector in R Programming? Explain with some operations of vector. **5**
- OR iv. V1 and V2 are two vectors as created by following commands: **5**
 V1 = c(10,20,30)
 V2 = c(50,60,70)
 Write R commands that performs following commands:
 (a) Access first element of v1 and third element of v2
 (b) Give name to each element of v1 and v2
 (c) Print second element of both vectors using name
 (d) Multiply each element of v1 by 5 and update v1
 (e) Add both vectors and assign it to new vector v3
- Q.3 Attempt any two:
- i. Explain the matrix in R Programming with following facts: **5**
 (a) Create a matrix.
 (b) Accessing elements
 (c) Modifying elements
 (d) rbind ()
 (e) cbind ()
- ii. Create a data frame that stores some basic information of laptop such as configuration of laptop from at least five companies. Apply length (), str (), summary () and duplicate () on this data frame. **5**
- iii. Define the Lists in such a way that explain following concepts:- **5**
 (a) Create a list that stores marks of subject “R language” of

[3]

- 10 students. Access fifth and seventh element on this list.
 (b) Write a R program to merge two given lists into one list.
- Q.4 i. Explain recursive function with program with respect to R Programming. **4**
 ii. Implement inheritance in S3 class using the main class Mobile Apps and two subclasses Game apps and Education apps. **6**
- OR iii. Explain following terms: **6**
 (a) browser () (b) traceback () (c) debug ()
- Q.5 Attempt any two:
- i. How do we import and export CSV file in R Programming? **5**
 ii. Design a data frame in R named as mobile that defines all required information about the mobile and export it into a CSV file. **5**
 iii. Design a table “Computer” that defines all the required information about the computer in MS Excel and import it into R. **5**
- Q.6 i. Explain string functions in R programming. **3**
 ii. What is the use of boxplot in R programming? How can you create a boxplot? **7**
- OR iii. How can you represent date and time in R programming? Explain with example. **7**

Marking Scheme

R programming-OE00051(T)

Q.1	i)	c) S (Answer)		1
	ii)	b) Free(Answer)		1
	iii)	a) Row.names() (Answer)		1
	iv)	b) 6 (Answer)		1
	v)	[1] 1(Answer) [1] 2		1
	vi)	c) 3 (Answer)		1
	vii)	b) read.csv()(Answer)		1
	viii)	c) Data frame(Answer)		1
	ix)	b) grid(Answer)		1
	x)	d) hist() (Answer)		1
Q.2	i	Explain 3 to 4 features	2 marks	2
	i.	Explain simple function	1.5 marks	3
		Explain with step argument	1.5 marks	
OR	ii.	Vector definition – 4 operation of vectors	1 marks (1 mark*4)	5
	iii.	a) Access first element of v1 and third element of v2- 1 mark b) Give name to each element of v1 and v2. - 1 mark c) Print second element of both vectors using name. - 1 mark d)Multiply each element of v1 by 5 and update v1. - 1 mark e)Add both vectors and assign it to new vector v3. - 1 mark		5
		Attempt any two(For question no. 3)		
Q.3	i	a) Create a matrix.	1 mark	5
		b) Accessing elements	- 1 mark	
		c) Modifying elements	- 1 mark	
		d) rbind ()	- 1 mark	
		e) cbind ()	- 1 mark	
	i.	Create data frame	1 mark	5

		Applying length ()	1 mark	
		Applying str()	1 mark	
		Applying summary ()	1 mark	
		Applying duplicate ()	1 mark	
	ii.	a) Create list.	2.5 marks	5
		b) R program list	2.5 marks	
Q.4	i.	Program for Recursive function	4 marks	4
	ii.	Creating Mobile class	2 marks	6
		Creating Game apps class	2 marks	
OR	iii.	Creating Education apps class	2 marks	
		a) browser()	2 marks	6
		b) traceback()	2 marks	
		c) debug ()	2 marks	
		Attempt any two question:- (For question no. 5)		
Q.5	i.	For creation of CSV file	1 mark	5
		For importing CSV file	2 marks	
		For exporting CSV file	2 marks	
	ii.	For creation of data frame	2.5 marks	5
		For exporting data onto CSV file	2.5 marks	
	iii.	For designing table	2.5 marks	5
		For import Excel file	2.5 marks	
Q.6	i.	Explain 3 to 4 String functions.	3 marks	3
	ii.	Uses of boxplot	3.5 marks	7
OR		Creating boxplot	3.5 marks	
	iii.	For representing date function	3.5 marks	7
		For representing time function	3.5 marks	

[2]

[3]