

USN

Course Code 2 2 M B A D A 4 0 1

Fourth Semester MBA Degree Examinations, October/November 2025

R PROGRAMMING FOR MANAGERS

Duration: 3 hrs

Max. Marks: 100

Note: 1. Answer any FOUR full questions from Question No. 1 to 7.

2. Question No. 8 is compulsory

3. Missing data, if any, may be suitably assumed

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO:PO)</u>
1	a. Apply the concept of data lake to Hadoop and list all the advantages offered by the data lake.	03	(3:1:1)
	b. Consider a file consists of 600 MB stored in HDFS. Block size = 128 MB Replication factor = 3 Using the above data, find (i) How many blocks are created? (ii) What is the total storage used including replication? (iii) How these blocks will be replicated across data nodes?	07	(3:1:1)
	c. Demonstrate with a figure, the various components of HDFS.	10	(3:1:1)
2.	a. Illustrate with example the use of Variable in R.	03	(3:2:1)
	b. Demonstrate with example the following: (i) Logical Expressions (ii) Subset function	07	(3:2:1)
	c. Write an Interactive R Program to find the roots of a Quadratic equation.	10	(3:2:1)
3.	a. What is an array? Give the difference between array, vector and matrix.	03	(3:3:1)
	b. Illustrate with example data frame and list all the characteristics of data frame.	07	(3:3:1)
	c. Write an R program to create an array of two 3×3 matrices each with 4 rows and 4 columns from two given vectors. Print the second row of the second matrix of the array and the element in the 3rd row and 3rd column of the 1st matrix.	10	(3:3:1)
4.	a. Develop a function in R to check whether the given number is odd or even.	03	(3:4:1)
	b. Illustrate with example the various components of a function in R programming language.	07	(3:4:1)
	c. Write an Interactive R program using functions to demonstrate simple calculators having at least four functionalities.	10	(3:4:1)
5	a. Identify the R command to print all the variable values.	03	(3:5:1)
	b. Demonstrate with example, the generalized linear model using R.	07	(3:5:1)

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| | c. | Identify and explain the various steps involved in the Integration of R programming language with other programming languages. | 10 | (3:5:1) |
| 6. | a. | Identify and explain the various items used in the syntax of R. | 03 | (3:2:1) |
| | b. | Develop an interactive R program to calculate the simple interest and compute the total balance. | 07 | (3:1:1) |
| | c. | Demonstrate with a figure, how the block replication is done in HDFS. | 10 | (3:1:1) |
| 7. | a. | Write a function in R to perform addition of two numbers. | 03 | (3:2:1) |
| | b. | Write the syntax of various forms of IF statement and give example for each. | 07 | (3:3:1) |
| | c. | Develop an Interactive R Program to read two matrix and perform addition, subtraction and multiplication operations on matrix. | 10 | (3:3:1) |

8. Case Study

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| (i) | Apply the Apache Hadoop parallel MapReduce data flow steps for the input given below and count the number of times each word is used. | 10 | (3:1:1) |
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Input:

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see  spot  run  man
run  spot  run  ran
see  the   cat  tha
sea  sot   bat  run
soe  spot  ran  see

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| (ii) | Demonstrate the various characteristics of big data. | 10 | (3:1:1) |
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