TOTAL PAGES: 2

23DAU418N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Fourth Semester)

Branch- COMPUTER SCIENCE WITH DATA ANALYTICS

R PROGRAMMING FOR DATA ANALYSIS

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	R was created mainly for--- a) Statistical analysis & Graphics b) Web design c) Testing d) Developing games	K1	CO1
	2	What does the attributes(object) return? a) Address of an object b) Size of an object c) The class of an object d) Meta Data	K2	CO3
2	3	Identify the function that reads tabular data into R as a data frame. a) write.table() b) scan() c) read.table() d) load()	K1	CO2
	4	Select the R function that saves an object in a readable text format. a) saveRDS() b) dump() c) serialize() d) write.csv()	K2	CO2
3	5	Identify the operator that allows to extract multiple elements from a vector by passing an integer sequence. a) [ ] b) [[ ]] c) $ d) { }	K1	CO3
	6	Describe the function dplyr package that is used to retain only specific columns from a data frame. a) filter() b) mutate() c) arrange() d) select ()	K2	CO3
4	7	Which loop continues until a break statement stops it? a) while b) for c) repeat d) until	K1	CO4
	8	R resolves free variables inside functions using which scoping rule. a) Lexical b) Dynamic c) Procedural d) Temporal	K2	CO4
5	9	Identify the apply function always returns a list. a) sapply() b) tapply() c) lapply() d) vapply()	K1	CO4
	10	Select the function used to reproduce the same random numbers in R simulations. a) random.seed() b) set.seed() c) seed.start() d) reset.seed()	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Describe the basic features and design of R. why it is used for statistical computing.	K2	CO1
		(OR)		
	11.b.	Explain the concept of explicit coercion in R and provide an example.		CO1/CO3
2	12.a.	Demonstrate importing a dataset in R using read.table() or readr.	K3	CO2
		(OR)		
	12.b.	Demonstrate how to save and load R objects using textual and binary formats.		CO2/CO3
3	13.a.	Demonstrate subsetting a nested list and removing NA values.	K3	CO3
		(OR)		
	13.b.	Illustrate basic dplyr operations on a data frame with examples.		CO3
4	14.a.	Analyze how lexical and dynamic scoping rules affect the behavior of free variables in R.	K4	CO4
		(OR)		
	14.b.	Evaluate the role of functions in R programming.		CO4
5	15.a.	Compare for loop and apply functions regarding efficiency, readability, and usability.	K4	CO4
		(OR)		
	15.b.	Evaluate the importance of reproducibility in R simulations and the role of set.seed().		CO5

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Compare vectors, lists, matrices, and data frames in R.	K4	CO3
2	17	Develop a workflow in R to read a dataset, handle missing values, and summarize its contents.	K5	CO2
3	18	Create a workflow to subset a data frame using base R and dplyr, and compare their efficiency.	K5	CO3
4	19	Analyze how if-else and while loops control the flow of R programs.	K4	CO4
5	20	Critically evaluate the role of R's debugging tools in identifying and resolving errors in complex data analysis workflows.	K6	CO5

Z-Z-Z END