

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BCA DEGREE EXAMINATION DECEMBER 2025
(Fifth Semester)**

Branch – **COMPUTER APPLICATIONS**

R PROGRAMMING

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	Define a valid R object type. (a) Vector (b) Matrix (c) List (d) All of the above	K1	CO1
	2	Show which function converts a vector to numeric explicitly. (a) as.numeric() (b) to.numeric() (c) numeric() (d) coerce.numeric()	K2	CO1
2	3	Identify the dplyr function is used to select specific columns from a data frame. (a) filter() (b) select() (c) mutate() (d) arrange()	K1	CO2
	4	Show which function removes missing values from a data frame. (a) na.omit() (b) drop.na() (c) removeNA() (d) deleteNA()	K2	CO2
3	5	Define lazy evaluation in R. (a) Function arguments are evaluated only when used (b) Arguments are evaluated immediately (c) Function runs slowly (d) None of the above	K1	CO3
	6	Explain the meaning of Lexical scoping in R. (a) Function can access variables where it is defined (b) Variables are global (c) Same as dynamic scoping (d) None	K2	CO3
4	7	Identify the function that applies another function to each element of a list. (a) lapply() (b) sapply() (c) apply() (d) tapply()	K1	CO4
	8	Show which function is used for debugging in R. (a) trace() (b) debug() (c) recover() (d) All of these	K2	CO4
5	9	Identify the high-level plotting function in R. (a) plot() (b) lines() (c) points() (d) par()	K1	CO5
	10	Explain which function draws an axis on the current plot. (a) axis() (b) par() (c) mar() (d) jar()	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.	Identify the R object types with examples.	K2	CO1
	(OR)			
	11.b.	Describe attributes in R and demonstrate their use in data frames.		
2	12.a.	Using a data frame of students, filter those with marks > 70 and arrange by descending marks.	K3	CO2
	(OR)			
	12.b.	Analyze the group by() function in dplyr and its importance in summarizing data.		
3	13.a.	Illustrate argument matching and lazy evaluation in R functions with examples.	K4	CO3
	(OR)			
	13.b.	Demonstrate lexical scoping in R with a suitable example..		
4	14.a.	Construct a recursive function to calculate factorial and show how to debug it using debug() or traceback().	K3	CO4
	(OR)			
	14.b.	Compare lapply(),sapply() and tapply() with examples.		
5	15.a.	Differentiate between high-level and low-level plotting commands in R.	K4	CO5
	(OR)			
	15.b.	Evaluate the use of dynamic graphics and device drivers in R for data visualization.		

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	Construct the creation, naming, and subsetting of vectors, matrices, and lists in R.	K4	CO1
2	17	Implement methods to read and write data from files and URLs in R.	K4	CO2
3	18	Analyze recursion in R and compare lexical and dynamic scoping.	K4	CO3
4	19	Analyze vectorized operations in R and explain how apply() and mapply() functions work.	K4	CO4
5	20	Illustrate different graphical procedures in R, including customization of plots, labels, colors, and device usage.	K4	CO4

Z-Z-Z

END