23CBA416N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BCom DEGREE EXAMINATION MAY 2025
(Fourth Semester)

Branch – **COMMERCE (BUSINESS ANALYTICS)**

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	Which of the following is NOT a valid data structure in R? a) Matrix b) Data frame c) List d) ArrayList	K1	CO1
	2	What is the default environment for interacting with R? a) RStudio b) Jupyter Notebook c) R Console d) Python Shell	K2	CO1
2	3	In R, which function is used to retrieve the mode of an object? a) getmode() b) mode() c) object.mode() d) typeof()	K1	CO2
	4	What is the default mode of a vector in R? a) Integer b) Character c) Logical d) Numeric	K2	CO2
3	5	Which function is used to create an empty list in R? a) list() b) vector() c) data.frame() d) array()	K1	CO3
	6	How can you create a data frame in R? a) data.frame() b) matrix() c) array() d) df()	K2	CO3
4	7	What is the primary function of a control statement in programming? a) To loop over a sequence of numbers. b) To make decisions and execute specific code based on conditions. c) To declare variables. d) To store data in memory.	K1	CO4
	8	Which of the following statements will correctly exit a loop early in Python? a) continue b) break c) exit() d) stop()	K2	CO4
5	9	Which of the following is a high-level plotting command in Python used for creating simple plots? a) plot() b) scatter() c) hist() d) All of the above	K1	CO5
	10	Which of the following methods is typically used to display multivariate data in Python? a) Bar plot b) Box plot c) Heatmap d) Pie chart	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.	Explain Functions and Features of R Programming with examples.	K2	CO1
		(OR)		
	11.b.	Illustrate R environment and how to use the R Commands.		
2	12.a.	Compare and contrast ordered and unordered factors in R?	K4	CO2
		(OR)		
	12.b.	Define arrays in R? How are arrays indexed and manipulated?		
3	13.a.	Explain about list in R, and how do you create one?	K2	CO3
		(OR)		
	13.b.	Illustrate about data frame in R, and how do you create one?		
4	14.a.	Explain how the for loop works in Python using the range () function. How does it differ from iterating over a list?	K4	CO4
		(OR)		
	14.b.	Enumerate the order of operations in mathematical expressions, and how do parentheses affect this order?		
5	15.a.	Elucitate role of the plot() function in matplotlib?	K4	CO5
		(OR)		
	15.b.	Explain how the scatter() function in matplotlib differs from the plot() function. Provide an example where each function would be more appropriate.		

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	Describe the structure of a data frame in R. How do data frames differ from matrices?	K2	CO1
2	17	Describe matrix multiplication in R. How do you perform matrix multiplication using R?	K4	CO2
3	18	Outline the use attach() and detach() with a data frame with examples?	K2	CO3
4	19	Explain infinite loop? How can an infinite loop be created intentionally, and how can you avoid it? Write a Python program that demonstrates an infinite loop.	K4	CO4
5	20	Summarize advantages and disadvantages of using 3D plots compared to 2D plots? Discuss a situation where 3D plots would be more effective and one where they could make the visualization more complex or misleading.	K4	C05

Z-Z-Z END