

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

**BSc DEGREE EXAMINATION MAY 2026
(Second Semester)**

Branch – **COMPUTER SCIENCE WITH DATA ANALYTICS**

PYTHON PROGRAMMING / PYTHON 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	Which of the following is an invalid variable name in Python? (i) _var (ii) var_1 (iii) 1_var (iv) Var	K1	CO1
	2	Show the result of the Python expression 10 // 3. (i) 3.33 (ii) 3 (iii) 1 (iv) 3.0	K2	CO1
2	3	What is the default return value of a function that does not have a return statement? (i) 0 (ii) False (iii) None (iv) Null	K1	CO2
	4	Rephrase the purpose of the break statement in a loop. (i) Skips current iteration (ii) Terminates the loop (iii) Restarts the loop (iv) Exits the program	K2	CO2
3	5	Recall the keyword used to check if an element is present in a List. (i) exists (ii) in (iii) find (iv) check	K1	CO3
	6	Explain the output of list("abc"). (i) ['abc'] (ii) ['a', 'b', 'c'] (iii) ('a', 'b', 'c') (iv) Error	K2	CO3
4	7	Which method is used to remove a specific key-value pair from a Dictionary? (i) remove() (ii) discard() (iii) pop() (iv) delete()	K1	CO4
	8	Interpret the behavior of the 'a+' file mode. (i) Read-only (ii) Write-only (iii) Append and Read (iv) Overwrite and Read	K2	CO4
5	9	Identify the Pandas function used to view the first 5 rows of a dataset. (i) view() (ii) tail() (iii) head() (iv) show()	K1	CO5
	10	Summarize the use of matplotlib.pyplot.xlabel(). (i) Sets the title (ii) Sets the x-axis label (iii) Sets graph legend (iv) Sets plot color	K2	CO5

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.	List the different types of Literals available in Python with examples	K1	CO1
		(OR)		
	11.b.	Name and explain the use of any five built-in functions in Python.		
2	12.a.	Identify the uses of a function parameters.	K2	CO2
		(OR)		
	12.b.	Translate a mathematical formula into a Python function using keyword arguments.		
3	13.a.	Organize a script to find the second largest number in a list of integers.	K3	CO3
		(OR)		
	13.b.	Solve a problem to swap two numbers using a single Tuple assignment.		
4	14.a.	Distinguish between a shallow copy and a deep copy of a Dictionary.	K4	CO4
		(OR)		
	14.b.	Dissect the different steps involved in handling a FileNotFoundError exception.		
5	15.a.	Model a NumPy array multiplication and demonstrate the difference from list multiplication.	K3	CO5
		(OR)		
	15.b.	Select and describe the methods used to rename columns in a Pandas DataFrame.		

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	Write a program to find the roots of a quadratic equation using decision statements.	K6	CO1
2	17	Explain the concept of String slicing in-depth with examples for various step values.	K2	CO2
3	18	Develop a Python script to remove all duplicate elements from a list without using sets.	K3	CO3
4	19	Survey the various set methods like symmetric_difference() and isdisjoint() with code snippets	K4	CO4
5	20	Formulate a Matplotlib script to create a Pie Chart representing the distribution of marks in a class.	K5	CO5

Z-Z-Z END