

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(First Semester)

Branch – **INFORMATION TECHNOLOGY**

DATA ANALYSIS AND VISUALIZATION USING PYTHON

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	What does pass do in Python? (i) Does nothing (ii) Ends Program (iii) Stops execution (iv) skips iteration	K1	CO1
	2	_____ operator is used for exponentiation. (i) ^ (ii) ** (iii) exp (iv) //	K2	CO1
2	3	Functions are defined using _____. (i) def (ii) define (iii) func (iv) function	K2	CO2
	4	Which data type is immutable? (i) Dictionary (ii) List (iii) Set (iv) Tuple	K1	CO2
3	5	Dictionary stores data in _____. (i) index (ii) key-value pairs (iii) list (iv) tuple	K2	CO3
	6	Which Python function is used to read a single line of text from the user input? (i) input() (ii) open() (iii) print() (iv) read()	K1	CO3
4	7	Pandas is used for _____. (i) Data analysis (ii) Gaming (iii) Networking (iv) Web design	K1	CO4
	8	DataFrame is _____. (i) 1D (ii) 2D (iii) 3D (iv) 4D	K2	CO4
5	9	Missing values handled using _____. (i) clean() (ii) delete() (iii) fillna() (iv) remove()	K2	CO5
	10	Which library is used for plotting (i) Matplotlib (ii) NumPy (iii) Pandas (iv) SciPy	K1	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.	Illustrate Python operators with examples.	K3	CO1
	(OR)			
	11.b.	How if, elif, and else statements are handled in Python? Explain with suitable Python examples.		
2	12.a.	Explain recursion and demonstrate its use with a Python example.	K5	CO2
	(OR)			
	12.b.	Compare and contrast lists and tuples in Python with relevant examples.		
3	13.a.	Summarize the concepts of file handling in Python.	K5	CO3
	(OR)			
	13.b.	Interpret the basic features and functionalities of NumPy		
4	14.a.	Explore about Series in Pandas with relevant example program.	K3	CO4
	(OR)			
	14.b.	Explore the various operations performed on DataFrames.		
5	15.a.	Compile and discuss various data cleaning techniques.	K6	CO5
	(OR)			
	15.b.	Construct and explain the steps involved in handling CSV files.		

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	Illustrate the Software Development Process in Python.	K3	CO1
2	17	Explain string functions in Python with examples.	K5	CO2
3	18	Evaluate the various operations that can be performed on dictionaries.	K5	CO3
4	19	Explore key statistical techniques used in data analysis, and demonstrate their application using appropriate Python example programs.	K3	CO4
5	20	Summarize the various techniques used in data visualization.	K6	CO5