R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT
(An Autonomous Institute U/s UGC Act 1956)

B.Voc. SEMESTER-III, SEMESTER END EXAMINATION – WINTER 2025

SUBJECT CODE: 1SD304	**DATE: 23-12-2025**
SUBJECT NAME: PYTHON PROGRAMMING	
TIME: 11:00 AM to 01:00 PM	**TOTAL MARKS: 50**

Instructions

1. It is **compulsory** for students to write **Enrolment No. /Seat No.** on the question paper.
2. Attempt all questions in the question paper.
3. The figures to the right of each question indicate full marks. Make suitable assumptions with proper justification wherever required.
4. Simple, non-programmable scientific calculators are permitted.
5. BL - Cognitive Level (As per Revised Bloom's Taxonomy) (R-Remember, U-Understanding, A –Application, N –Analyze, E – Evaluate, C -Create), CO - Course Outcomes.

			Marks	BL	CO
Q.1	**(a)**	Define Python programming and list its key features.	**05**	**R**	**1**
	(b)	Explain the different types of operators used in Python.	**05**	**R**	**1**
Q.2	**(a)**	Explain append(), extend(), insert(), remove(), pop(), and reverse() with examples for each.	**05**	**U**	**2**
	(b)	Write a Python program that removes duplicates from a list while maintaining order.	**05**	**A**	**2**

OR

			Marks	BL	CO
Q.2	**(a)**	Explain the role of dictionary methods such as keys(), values(), items(), get(), and setdefault() with examples for each.	**05**	**U**	**2**
	(b)	Write a Python program that counts the frequency of each word in a given string using a dictionary.	**05**	**A**	**2**
Q.3	**(a)**	Differentiate parameters and arguments in Python functions. Provide suitable examples.	**05**	**U**	**3**
	(b)	Write a program for lambda function to find the square of a number.	**05**	**A**	**3**

OR

			Marks	BL	CO
Q.3	**(a)**	Differentiate user-defined function and a built-in function in Python. Provide examples of both.	**05**	**U**	**3**

(b)	Write a program that takes a list of names and returns a list containing only names that start with the letter 'A' using the filter() function.	**05**	**A**	**3**

Q.4	**(a)**	Explain RegEx Functions with examples.	**05**	**U**	**4**
	(b)	Write a Python program that uses a loop to print each character of a string in reverse order.	**05**	**A**	**4**

OR

Q.4	**(a)**	Explain read(), readline(), write(), writelines() methods used to read and write data in a file with examples.	**05**	**U**	**4**
	(b)	Write a Python program that writes data into a CSV file using the csv module.	**05**	**A**	**4**

Q.5	**(a)**	Explain at any five NumPy functions that are useful for numerical Computations.	**05**	**U**	**5**
	(b)	Develop a Python program using NumPy slicing and indexing to extract and modify specific elements from a 2D array.	**05**	**A**	**5**

OR

Q.5	**(a)**	Explain how to customize a plot in Matplotlib, including modifying titles, labels, Colors, and legends.	**05**	**U**	**5**
	(b)	Construct a Python script using Matplotlib to visualize data through multiple subplots (e.g., line plot, bar chart, and scatter plot) on the same figure with appropriate titles and labels.	**05**	**A**	**5**

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