

**Anjuman Islam Janjira Degree College of Science**  
**Murud-Janjira, Raigad-402401**  
**Affiliated to University of Mumbai**

<b>Class: -F.Y.B.Sc. C.S.</b>	<b>Subject:- Intro. to Programming with Python</b>
<b>Semester:- I</b>	<b>Course code: -USCS102</b>
<b>Exam Event:- Additional Exam Summer 2024 (FH)</b>	<b>Marks: -75</b>
<b>Date: - 21/03/2024</b>	<b>Duration: - 02:30 Hours</b>

- N.B. –**
- 1 – All questions are compulsory.**
  - 2 – All questions have internal choice.**
  - 3 – Figures to the right indicate full marks.**

**Q1. Answer the following question. (Any 4 out of 6) 20**

- 1) Explain Provide an explanation of garbage collection in Python.
- 2) Clarify comments and docstrings in Python, supported by a relevant example.
- 3) Develop a Python program that displays the astrological sign for a given date of birth.
- 4) Provide explanations for all print functions, accompanied by suitable examples.
- 5) Write a brief note on numeric data types, including an example.
- 6) Define a Set and provide a suitable example for clarification.

**Q2. Answer the following question. (Any 4 out of 6) 20**

- 1) Provide an explanation of arithmetic and comparison operators, and furnish an example for each.
- 2) Highlight the distinctions between a function and a method.
- 3) Develop a Python program to create a calculator capable of performing basic operations.
- 4) Clarify the concept of unary minus and bitwise operators, and provide an example for better comprehension.
- 5) Define a lambda function and furnish a Python program to compute the square, cube, and square root using this function.
- 6) Clarify the process of creating, indexing, and slicing an array, supported by an example.

**Q3. Answer the following question. (Any 4 out of 6) 20**

- 1) Define a list and elucidate its methods and functions.
- 2) Describe the process of creating a string and elaborate on initializing, indexing, and slicing with an example.
- 3) Provide distinct methods for adding and deleting items from a list, along with a relevant example.
- 4) Define a list and provide a Python program to identify the second smallest and largest numbers in a list.
- 5) Elaborate on the techniques utilized for examining strings in Python, substantiated by an illustrative example.
- 6) Explain the operators associated with dictionaries, and provide an example for clarification.

**Q4. Answer the following question. (Any 5 out of 6) 15**

- 1) Provide an explanation of the break statement.
- 2) Clarify the purpose of the continue statement.
- 3) Enumerate and elucidate bitwise operators.
- 4) List and briefly explain logical, membership, and identity operators.
- 5) Develop a program to calculate the number of characters in a string.
- 6) Provide a list of symbols used for string formatting in Python.