

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MCA – SEMESTER II- EXAMINATION –WINTER-2024**

**Subject Code:629403**

**Date: 20/11/2024**

**Subject Name: Programming in Python**

**Time:02:30 PM TO 05:00 PM**

**Total Marks: 70**

**Instructions:**

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of simple calculators and non-programmable scientific calculators are permitted.

- Q.1 (a)** Provide significance of following keywords in python. **07**
- |          |           |            |
|----------|-----------|------------|
| 1. self  | 2. pass   | 3. except  |
| 4. yield | 5. global | 6. finally |
| 7. None  |           |            |

- (b)** Explain Python Execution Model in detail. **07**

- Q.2 (a)** Define following Terms: **07**
- |                        |                      |                   |
|------------------------|----------------------|-------------------|
| 1. Anonymous Functions | 2. Decorators        | 3. hash table     |
| 4. Regular Expression  | 5. Mutable Data type | 6. string slicing |
| 7. Pickling            |                      |                   |

- (b)** What is function? Explain its types with arguments. How to pass default argument and variable arguments using \*args and \*\*kwargs? **07**

**OR**

- (b)** What is files management in python? Explain its all function in detail with suitable example **07**

- Q.3 (a)** Compare and Contrast usage of List and Tuple. **07**

- (b)** Explain significance of following function in Python: **07**
- |           |           |           |
|-----------|-----------|-----------|
| 1. any()  | 2. repr() | 3. type() |
| 4. all()  | 5. ord()  | 6. dir()  |
| 7.range() |           |           |

**OR**

- Q.3 (a)** Explain significance of map(), filter() and reduce() function with suitable examples. **07**

- (b)** How string is stored in Python? List type of operations on string. Explain Built-in-functions used for string data type. **07**

- Q.4 (a)** Define an exception. Explain process of catching multiple exceptions in Python. **07**
- (b)** Explain Multiple Inheritance in Python with Method Resolution order in Multiple Inheritance. **07**

**OR**

- Q.4 (a)** Discuss usage of following special method in Python class. **07**

- |                            |                                |
|----------------------------|--------------------------------|
| 1. <code>__init__()</code> | 4. <code>__contains__()</code> |
| 2. <code>__add__()</code>  | 5. <code>__iter__()</code>     |
| 3. <code>__repr__()</code> | 6. <code>__new__()</code>      |
|                            | 7. <code>super()</code>        |

- (b)** Explain Data Analysis and processing operations on dataset using PANDAS library. **07**

- Q.5 (a)** Explain Dataframe in Python. Explain usage of following functions with significance : **07**

- |                             |                          |
|-----------------------------|--------------------------|
| 1. <code>rename()</code>    | 4. <code>unique()</code> |
| 2. <code>describe()</code>  | 5. <code>drop()</code>   |
| 3. <code>set_index()</code> | 6. <code>dropna()</code> |

- (b)** Compare `re.search()` and `re.match()` methods with example. **07**

**OR**

- Q.5 (a)** Write a Python program to search for a literal string in a string and also find the location within the original string where the pattern occurs. **07**

**Sample text :** 'The quick brown fox jumps over the lazy dog.'

**Searched words :** 'fox'

- (b)** What is the use of Matplotlib in Python? Explain use of `plot()`, `show()` and `scatter()` functions of Matplotlib. **07**

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