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**44/52 (SEM-4) CIT4**

**2025**

**PYTHON PROGRAMMING**

Paper : CIT0400404

*Full Marks : 45*

Time : Two hours

***The figures in the margin indicate full marks for the questions.***

1. Answer the following questions :  $1 \times 5 = 5$ 
  - (a) In Python, \_\_\_\_\_ symbol is used to add comment.
  - (b) Is Python **case-sensitive** ? Yes **or** Not ?
  - (c) A variable is the same as a constant. True **or** False ?
  - (d) What is the purpose of pass statement ?
  - (e) Can we update tuples ?

2. Answer **any five** questions from the following :  $2 \times 5 = 10$

- (a) Does python store dictionary elements in any particular order ? Explain.
- (b) What is the use of **in** operator ? Explain.
- (c) A dictionary is **mutable object**. Explain.
- (d) What is **len()** function used for list and tuple ?
- (e) How we can concatenate two list ? Explain.
- (f) What is the use of **commit()** and **rollback()** operations in Python SQL database access ?
- (g) Define Python **Virtual Machine**.
- (h) Write *any two* important features of python.
- (i) Explain the concept of **polymorphism** in object-oriented programming with respect to Python.
- (j) Differentiate between **try-except** and **try-finally** blocks in Python's exception handling.

3. Answer **any four** questions from the following :  $5 \times 4 = 20$

- (a) What is **Lambda Function** ? Explain with suitable programming examples.
- (b) Differentiate between **List** and **Tuples**.
- (c) Show **method overriding** in python with programming examples.
- (d) What is **Default Argument** ? Explain with suitable programming language.
- (e) What is **Local variable** and **Global variable** ? Explain with suitable programming language.
- (f) Explain **error handling** in Python using try, except, and finally.
- (g) How does **indentation** affect Python code ? Explain.
- (h) Explain the concept of **loops** in Python with examples.

4. Answer **any one** question from the following :  $10 \times 1 = 10$

- (a) Write a python program that displays stars in **right angled triangular form** using **nested loops**.

(b) What is **inheritance** ? What are the types of inheritance ? Explain with suitable programming examples.

(c) Explain **Python SQL Database Connection** and **database operations**.

(d) Compare **NumPy**, **Matplotlib**, **OpenCV**, and **Tkinter** based on their applications and significance in Python programming.

(e) Discuss Python's **file-handling** techniques with examples.

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