

(Time: 2½ hours)

Total Marks: 75

- N. B.: (1) **All** questions are **compulsory**.
 (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
 (3) Answers to the **same question** must be **written together**.
 (4) Numbers to the **right** indicate **marks**.
 (5) Draw **neat labeled diagrams** wherever **necessary**.
 (6) Use of **Non-programmable** calculators is **allowed**.

- 1. Attempt any three of the following:** **15**
- What is Python? List and explain feature of Python.
 - Write the steps to install Python and to run Python code.
 - Explain type conversion of variable in Python.
 - Explain if...else statement with example.
 - Explain the use of break statement in a loop with example.
 - What is the difference between interactive mode and script mode in Python?
- 2. Attempt any three of the following:** **15**
- How function is defined and called in Python?
 - Write a function that takes single character and prints 'character is vowel' if it is vowel, 'character is not vowel' otherwise.
 - Short note on incremental development.
 - What is recursive function? Write a Python program to calculate factorial of a number using recursive function?
 - Explain various string operations that can be performed using operators in Python.
 - Explain str.find() function with suitable example.
- 3. Attempt any three of the following:** **15**
- What is list? How to create list?
 - Explain *try...except* blocks for exception handling in Python.
 - Explain various built-in list functions and methods.
 - What is tuple in python? How to create and access it?
 - Explain the properties of dictionary keys.
 - Explain open() and close() methods for opening and closing a file.
- 4. Attempt any three of the following:** **15**
- What is regular expression? Explain various patterns of regular expression.
 - Explain match() function with suitable example.
 - What is method overriding? Write an example.
 - What is multithreaded programming? Explain *_thread* module with suitable example.
 - What is module? What are the advantages of using module?
 - Explain various functions of math module.

[TURN OVER]

5. Attempt any three of the following:

15

- a. Explain Checkbutton widget with example.
- b. Write short note tkinter messagebox module.
- c. What is layout management? Explain Grid manager.
- d. Explain place geometry manager with example.
- e. Write and explain the steps insert a row into MySQL database with example.
- f. Write short note on cursor object in Python.
