(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
a. What is Python? List and explain feature of Python.
b. Write the steps to install Python and to run Python code.
c. Explain type conversion of variable in Python.
d. Explain if...else statement with example.
e. Explain the use of break statement in a loop with example.
f. What is the difference between interactive mode and script mode in Python?

2. **Attempt _any three_ of the following:** 15
a. How function is defined and called in Python?
b. Write a function that takes single character and prints 'character is vowel' if it is vowel, 'character is not vowel' otherwise.
c. Short note on incremental development.
d. What is recursive function? Write a Python program to calculate factorial of a number using recursive function?
e. Explain various string operations that can be performed using operators in Python.
f. Explain str.find() function with suitable example.

3. **Attempt _any three_ of the following:** 15
a. What is list? How to create list?
b. Explain _try...except_ blocks for exception handling in Python.
c. Explain various built-in list functions and methods.
d. What is tuple in python? How to create and access it?
e. Explain the properties of dictionary keys.
f. Explain open() and close() methods for opening and closing a file.

4. **Attempt _any three_ of the following:** 15
a. What is regular expression? Explain various patterns of regular expression.
b. Explain match() function with suitable example.
c. What is method overriding? Write an example.
d. What is multithreaded programming? Explain _thread module with suitable example.
e. What is module? What are the advantages of using module?
f. Explain various functions of math module.

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5. **Attempt _any three_ of the following:** **15**
a. Explain Checkbutton widget with example.
b. Write short note tkMessageBox 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.

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