

CBCS SCHEME

18MCA32

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Third Semester MCA Degree Examination, Dec.2024/Jan.2025

Programming using Python

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain any string functions with examples. (10 Marks)
- b. Give the output of the following:
 - i) $((-(-(-5))))$
 - ii) $5 * 2 ** 3 - 15$
 - iii) $-9 \% 2$
 - iv) $9 \% -2$
 - v) $-17/10$

(10 Marks)

OR

- 2 a. Explain the two ways to use python interpreter. What are error that can be detected by Python? Differentiate between them with one example each. (10 Marks)
- b. Write a python program to find sum of all odd and even numbers from n1 to n2 where n1 and n2 are positive integers. (10 Marks)

Module-2

- 3 a. Define module. What are the 2 ways to import module? Explain. (06 Marks)
- b. Write a Python program to find given year is leap year or not. (06 Marks)
- c. Explain any four string object methods. (08 Marks)

OR

- 4 a. Discuss the importance of docstring in testing the code semi automatically using doctest. (08 Marks)
- b. Write a Python program to find roots of quadratic equation. (06 Marks)
- c. Write short note on short circuit evaluation performed by Python when evaluating combined comparisons. (06 Marks)

Module-3

- 5 a. Write a python program to search an element using binary search (Recursive). (08 Marks)
- b. Compare list and string in python. (04 Marks)
- c. Explain any five list methods with example. (08 Marks)

OR

- 6 a. Write a python program to compute sum of diagonals of 3×3 square matrix. (10 Marks)
- b. What do you mean by slicing of lists? List and explain the various operations that can be applied on lists. (10 Marks)

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Module-4

- 7 a. Explain any 4 methods on each of the following storage collection types i) file ii) set iii) dictionary. Give examples. (12 Marks)
- b. Write a program to read string in lower case and count the occurrence of each alphabet with the help of dictionary. (08 Marks)

OR

- 8 a. Compare the storage collection types strings, lists, tuples, sets and dictionary. (12 Marks)
- b. What is inversion of dictionary? Give examples. (08 Marks)

Module-5

- 9 a. With an example, discuss the different components of a tkinter module. (10 Marks)
- b. List and explain the phase involved in object oriented programming. (10 Marks)

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- 10 a. Write a short note on :
 - i) `isinstance()`
 - ii) `__init__()`
- b. Explain the Model View Controller design with the help of tkinter program. (08 Marks)
- c. Write a GUI application with a button labeled "GoodBye". When the button is clicked, the window closes. (06 Marks)
