

CBCS SCHEME

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21BT42

Fourth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Python Programming + Lab

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define Algorithm. Mention the types. (04 Marks)
- b. Explain the building blocks of algorithms with neat flow charts. (06 Marks)
- c. Write a brief algorithmic procedure to find the minimum number in a list. (10 Marks)

OR

- 2 a. What are the properties that an algorithm must satisfy? Explain them. (04 Marks)
- b. Describe Binary Search Algorithm. Provide the pseudocode and explain the working. (06 Marks)
- c. With a brief procedure, explain the game play of the Towers of Hanoi. (10 Marks)

Module-2

- 3 a. Define Expressions. Explain its types. (04 Marks)
- b. What is the output of the code?
print ('Hello World' + 100 + 'How are you?').
Also, explain the statement if it produces any error. (06 Marks)
- c. Discuss various methods of importing modules in Python programs. (10 Marks)

OR

- 4 a. Define Lambda functions. Using this concept, write a program to add 2 numbers. (04 Marks)
- b. List useful string methods in Python. Explain with an example for each method. (06 Marks)
- c. Write a Python program to show different data types. (10 Marks)

Module-3

- 5 a. Discuss the concept of string formatting in Python. Provide an example of formatting strings using f-strings and format () method. (04 Marks)
- b. Explain Flow control statements with examples. (06 Marks)
- c. Write a Python program to convert temperatures from Celsius to Fahrenheit. (10 Marks)

OR

- 6 a. Discuss the concept of nested if and else statements. (04 Marks)
- b. Write short notes on :
i) Break statement ii) Continue statement iii) Pass statement. (06 Marks)
- c. Write a Python program to print prime numbers from 5 to 50. (10 Marks)

Module-4

- 7 a. What is a Function? Explain the method to declare a function. (04 Marks)
- b. Explain Local and Global scope of variables in Python with suitable examples. (06 Marks)
- c. Write a Python program using functions to find if a string is Palindrome or not. (10 Marks)

OR

1 of 2

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

- 8 a. Define List. Explain with concept of slicing and indexing with suitable examples. (04 Marks)
b. Write short notes on :
i) Cloning list ii) Aliasing iii) Parameters in lists. (06 Marks)
c. Write a Python program using a function to calculate the determinant of an equation
 $x^2 + 14x + 5 = 0$. (10 Marks)

Module-5

- 9 a. What are Tuples? How is it different from lists? (04 Marks)
b. Explain tuple unpacking, with an example. (06 Marks)
c. Write a Python program to simulate the selection sorting process. (10 Marks)

OR

- 10 a. Explain the purpose and usage of keys (), Values (), and items () in dictionaries. (04 Marks)
b. John is an engineer working as an ABC specialist in London. His age is 35. His hobbies are biking , travelling , singing and music. Using dictionaries, mention the attributes using key – value pair. Explain the process. (06 Marks)
c. Write a Python program to check if key already exists in a dictionary. (10 Marks)
