

Total No. of Questions: 10

PE12171 [6581]-2402 F.E.

PCC-151-ITT : PROGRAMMING AND PROBLEM SOLVING

(2024 Pattern) (Credit System) (Semester - I/II)

Time: 2½ Hours Max. Marks: 70

Instructions to the candidates:

- 1) Attempt Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary and clearly state.

Q1)

- a) Explain the importance of algorithms and programs in computer problem solving. [3]
- b) List different problem solving strategies. Explain any one with an example. [3]
- c) Write any four features of the python programming language. [4]
- d) Illustrate top-down design using a suitable example. [4]

OR

Q2)

- a) Write a pseudo code for swapping two numbers. [3]
- b) What is problem solving? List down the difficulties for the problem solving. [3]
- c) What is object oriented programming? List down its features with suitable examples. [4]
- d) Explain any four python programming language applications in details. [4]

Q3)

- a) What is dictionary? Mention any two dictionary operations. [3]
- b) Explain Loop with flow chart. [3]
- c) What is difference between 'break' and 'continue' statement in python? [4]
- d) Write a program to test whether a number entered by user is positive, negative or zero. [4]

OR

Q4)

- a) Explain use of range() function in for loop with suitable example. [3]
- b) Evaluate the importance of decision control statements in program execution. [3]

- c) Differentiate between if-else and if-elif-else statement. [4]
- d) Demonstrate the use of tuple data type with a suitable python program. [4]

Q5)

- a) Write a Lambda function to check whether a number is positive or negative. [4]
- b) Explain string immutability with an example. [5]
- c) Explain slice operation in strings with an example. [5]

OR

Q6)

- a) Define the chr() function. How is it different from ord()? [4]
- b) Develop a python program that counts the number of vowels and consonants in a given string using iteration. [5]
- c) Define function, explain function definition and function call with suitable example. [5]

Q7)

- a) How can you check the current file position in a file. [4]
- b) What is file path? Differentiate between absolute path and relative path. [5]
- c) Discuss file handling. List down the handling operations with examples. [5]

OR

Q8)

- a) What does the flush() method do in file handling. [4]
- b) Explain the difference between read() and readlines() methods. [5]
- c) Discuss the purpose of file manipulation operations like renaming and deleting. [5]

Q9)

- a) Describe the concept of data abstraction and encapsulation in object oriented programming. [4]
- b) How do the __init__() and __del__() methods help in creating and cleaning up objects in python? [5]
- c) Differentiate between class & object with example. [5]

OR

Q10)

- a) What is polymorphism? Give two types of polymorphism in object oriented programming. [4]
- b) Discuss garbage collection in python. How does it manage memory for objects? [5]
- c) Differentiate between public and private members with example. [5]

