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BE SEMESTER-VI (New) Examination April-2025

Subject Name: Python Programming   **Subject Code: CE602-N**

Date: 9/4/2025   Time: 12:30pm – 03:30pm   Total Marks: 70

Instructions:
1. Answer each section in separate answer sheet.
2. Use of scientific calculator is permitted.
3. All questions are Compulsory.
4. Indicate clearly, the option you attempt along with its respective question number.
5. Use the last page of main supplementary of rough work.

Section-I

Q-1 (A) (i) Which symbol is used for single-line comments in Python?   [5]

   a) #   b) $ c) //   d) /* */

   (ii) What does the range ( ) function in Python return?

   a) list of numbers   b) tuple of numbers

   c) sequence of numbers   d) dictionary of numbers

   (iii) Which of the following is a mutable data type in Python?

   a) tuple   b) string   c) set   d) list

   (iv) Which operator is used to access the attributes of a class in Python?

   a) ->   b) . (dot)   c) ::   d) #

   (v) Which of the following is not a standard module in Python?

   a) sys   b) math   c) pandas   d) time

(B) Explain the strengths and weaknesses of Python as a programming language.   [5]

(C) Explain list comprehension using an example.   [5]

OR

(C) Explain set comprehension using an example.   [5]

Q-2 (A) Differentiate between Lists and Tuples in Python with examples.   [5]

(B) Write a program in python using while loop to check whether given number is Armstrong or not.   [5]

OR

Q-2 (A) What are various data types used in Python? Explain with examples.   [5]

(B) Write a program in python using while loop to find the reverse of given numbers.   [5]

Q-3 (A) Describe the use cases where dictionaries are more suitable than lists for storing and retrieving data in Python.   [5]

(B) Write a Python program to add and multiple two dimensional matrices.   [5]

OR

Q-3 (A) Differentiate between the deep copy and shallow copy in details.   [5]

(B) Write a Python program to transpose a two dimensional matrices.   [5]

Section-II

Q-4 (A) (i) The default return value of a Python function if no return statement is used: [5]

    a) 0   b) None   c) Empty string   d) Error

(ii) What is the purpose of the lambda function in Python?

    a) To define a function without a name   b) To create a loop

    c) To define a function with a name   d) To define a class

(iii) Which of the following is not an exception type in Python?

    a) FileNotFoundError   b) IOError   c) MemoryError   d) StringError

(iv) Which of the following sorting algorithms is the most efficient in terms of time complexity for large datasets?

    a) Bubble Sort   b) Insertion Sort   c) Merge Sort   d) Selection Sort

(v) What will be the output of the following code snippet?

```
my_list = [1, 2, 3, 4, 5]
print(my_list[2:4])
```

    a) [1, 2]   b) [3, 4]   c) [2, 3]   d) [2, 4]

(B) Explain the role of indentation in Python programming. Why is it important? [5]

(C) What is the significance of the __init__ method in Python classes? Explain with an example. [5]

OR

(C) What are hash tables? Explain their significance in Python with example. [5]

Q-5 (A) Compare and contrast the map and filter functions in Python. Provide examples illustrating their distinct use cases. [5]

(B) Write a python program to read the text file using read (), readlines() and readline() methods. [5]

OR

Q-5 (A) What is Inheritance in Python? Explain different types of inheritance with code. [5]

(B) Write a Python program which will throw exception if the value entered by user is less than zero. [5]

Q-6 (A) Discuss situations with example where lambda functions are preferable over regular named functions. [5]

(B) Write a Python program to implement Merge Sort. [5]

OR

Q-6 (A) What are modules in Python? Explain the difference between built-in and user-defined modules. [5]

(B) Write a Python program to implement binary search. [5]

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