MCA II Semester (New Scheme) Main/Back Exam-2023-24

MCA 221 – Python Programming

Time : 3 Hours

Maximum Marks: 80
Min. Passing Marks: 26

Instructions to Candidates:

- Student has to attempt all 10 very short answer type questions (2 marks each).

- Student has to attempt all 5 short answer types questions (4 marks each).

- Student has to attempt all 5 questions (8 marks each).

      Use of following supporting materials is permitted during examination. (Mentioned in form No. 205)

1_____   2_____

PART A (Very Short Answer)

Q.1   Write a brief note on the following with examples.   **[2 marks each]**

    a.   Numerical data type

    b.   Dictionary data type

    c.   Set data type

    d.   Nested Lists

    e.   Tuples vs Lists

Q.2.   Explain whether the following statements are True or False with justifications.

                                                  [2 marks each]

    a.   Python is a low-level language.

    b.   Python files are stored with '.p' extension.

    c.   main () is a built-in function in Python.

    d.   Variables/Identifiers must be written in capital letters.

    e.   The output of print str*2 if str is 'Hello world!' will be HelloWorld! *2.

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A-094

1

PART B (Short Answer type)

Q.3 Differentiate between User-Defined function and Built-in functions. Write a short program to sum two numbers using built-in functions. **[4 marks]**

Q.4. Explain multithreading in Python with examples. **[4 marks]**

Q.5. What is Exception handling? Mention the different methods used for exception handling?
[4 marks]

Q.6. Explain the process of creating SQL database connections in Pythons. With the help of an example, describe the process of creating a table using SQL and Python. **[4 marks]**

Q.7. Write a python program that takes marks of the students as input and returns their grade as follows: **[4 marks]**

  a.   Marks> 80 and <=100 : A Grade

  b.   Marks> 60 and <=80 : B Grade

  c.   Marks> 40 and <=60 : C Grade

  d.   Marks> 30 and <=40 : D Grade

  e.   Marks> 0 and <=30 : F Grade

PART C

Q.8. What are File Objects? Explain any five file-handling functions with examples. What is the difference between appending and writing a file in python. **[8 marks]**

Q.9. Explain different types of operators in Python. What is operator precedence and associativity, explain with examples. What is slicing operation? Write a program that takes "university" as input and returns the last four letters. **[8 marks]**

Q.10. What is the role of self () in class declaration? How is the scope of objects in classes defined in Python? Explain the concept of polymorphism with respect to Python classes. **[8 marks]**

Q.11. What are Regular expression in Python? What are the advantages of using Regular Expressions? With the help of examples, explain the use of ^ (caret), * (star), ? (question mark) and \ (backslash) in Regular expressions. **[8 marks]**

Q.12. Consider the task of predicting the current temperature. You are given a. CSV file, which contains the peak temperatures of the current month. Write an efficient Python program, which reads the last 10 values from the .csv file (i.e., temperature for the last 10 days). It then calculates the average of those 10 values and stores the result in a separate text file. **[8 marks each]**

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A-094