END TERM EXAMINATION

SECOND SEMESTER [MCA]   JUNE-2024

Paper Code: MCA106   Subject: *Python Programming*
Time: 3 Hours   Maximum Marks: 60

Note: Attempt all questions as directed. Internal Choice is indicated.

Q1 Attempt **any Four** of the following: [4x5=20]
  i)   Mention & explain the python features in brief.
  ii) Explain the Identifiers, Keywords, Statements, Expressions, and Variables in Python programming language with examples.
  iii) What is the Dictionary in Python?
  iv) Discuss the relation between tuples and lists, tuples and dictionaries.
  v)   What are the three types of import statement in Python? Discuss.
  vi) What are packages? Give an example of package creation in Python.
  vii) Write python program to swap two variables.
  viii) What is an exception? Explain with few examples.
  ix) Explain what is meant by namespaces and scoping.

Q2 Explain the concept of decorators in Python functions. How do decorators enhance the functionality of existing functions?   **[10]**

OR

Q3 a) Write a program that generates 5 random numbers in the range 10 to 50. Use a seed value of 6. Make a provision to change this seed value every time you execute the program by associating it with the time of execution.   **[5]**
    b) i)   In the following statement, what do >5, >7 and >8 signify. **[2.5]**
             $print (f\ '\{n:>5\}\{n^2 :>7\}\{n^3 :>8\}')$
        ii) What will be the output of the following code segment? **[2.5]**
             Name = 'Sanjay'
             Cellno = 9812345678
             $p\ rint\ (\ f\ '\{name: 15\}:\{cellno:10\}')$

Q4 a) Create a list of tuples. Each tuple should contain an item and its price in float. Write a program to sort tuples in descending order by price.   **[5]**
    b) Write a program to implement stack data structure using "list". Show the output for 5 numbers to illustrate the stack principle of LIFO.   **[5]**

OR

Q5 Explain about Basic list Operations, Indexing, Slicing, & Built-in List Functions and Methods. How are positive and negative indices used to access substrings?   **[10]**

Q6 Describe the principles of encapsulation, inheritance, and polymorphism in Object Oriented Programming.   **[10]**

OR

Q7 Describe about Handling Exceptions with examples. Explain the syntax and usage of the **try-except** block in Python for catching and handling exceptions.   **[10]**

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Q8   Describe common array manipulation functions in NumPy, such as **numpy.reshape()**,   **numpy.transpose()**,   **numpy.concatenate()**,   and **numpy.split()**   [10]

OR

Q9   Explain series in pandas. How to create copy of series in pandas?   [10]

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