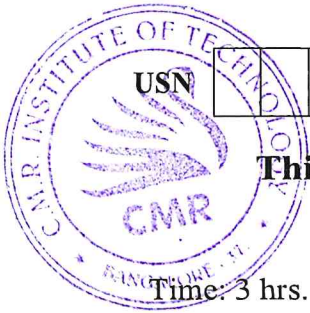


# CBCS SCHEME



20MCA31

## Third Semester MCA Degree Examination, July/August 2022 Data Analytics Using Python

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Write a note on:
- Keywords in Python.
  - Order of operations. (10 Marks)
- b. Write a program to prompt for a score between 0.0 and 1.0. If the score is out of range, print as error message. If the score is between 0.0 and 1.0, print a grade using the following table:

Score	Grade
$\geq 0.9$	A
$\geq 0.8$	B
$\geq 0.7$	C
$< 0.7$	F

(10 Marks)

OR

- 2 a. Explain the following :
- Arguments \*args and \*\*kwargs (05 Marks)
  - Continue and break statements. (05 Marks)
- b. With an example, explain how to define and call a user defined function in python. (10 Marks)

### Module-2

- 3 a. (i) Write a note on slicing of a list. (04 Marks)  
(ii) Write a python program to insert an element into the sorted list. (06 Marks)
- b. (i) Explain the following about strings in python.
- Creation
  - Accessing the character one at a time. (04 Marks)
- (ii) Any 3 string methods. (06 Marks)

OR

- 4 a. Explain encapsulation, polymorphism and inheritance in python with example. (10 Marks)  
b. What is a file? What are the different way(modes) of opening a file? (10 Marks)

### Module-3

- 5 a. What are the four pieces of information that a python integer contains? With a diagram show the difference between C and Python integer. (10 Marks)  
b. Write a note on attributes of arrays in NumPy. (10 Marks)

OR

- 6 a. What is broadcasting in Numpy arrays? Give example. (10 Marks)  
b. Write a note on aggregation functions available in Numpy with example. (10 Marks)

**Module-4**

- 7 a. How to read a text file in pieces? Explain with example. (10 Marks)  
b. Write a note on interacting with databases. (10 Marks)

OR

- 8 a. What are the built-in ways in which,  
(i) Data contained in pandas objects can be combined together? (06 Marks)  
(ii) Show an example of merging data on index. (04 Marks)  
b. Write a note on string manipulation using the regular expression methods. (10 Marks)

**Module-5**

- 9 a. What is Matplotlib? Write a python program to draw a basic plot and save the figure to a file using Matplotlib. (10 Marks)  
b. What are scatter plots? Write a python program to plot it. (10 Marks)

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OR

- 10 a. Differentiate between Matplotlib and seaborn. Write code to plot a line plot and histogram in seaborn. (10 Marks)  
b. Write a note on multiple subplots with examples. (10 Marks)

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