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20MCA31

Third Semester MCA Degree Examination, Feb./Mar. 2022
Data Analytics using Python

Time: 3 hrs.　　　　　　　　　　　　　　　　　　　　　　　　Max. Marks:100

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

Module-1

1　a. Describe arithmetic operators, assignment operators, comparison operators and logical operators in detail with example **(08 Marks)**
　b. With syntax, explain the finite and infinite looping constructs in python. What is the need for break and continue statements. **(07 Marks)**
　c. Write a python program to check whether a given number is even or odd. **(05 Marks)**

OR

2　a. How to declare and call functions in python programs? Illustrate with an example script. **(08 Marks)**
　b. Illustrate args and kwargs parameters in python programming language with an example. **(07 Marks)**
　c. Develop a python program to calculate the area of square, rectangle and circle using function. **(05 Marks)**

Module-2

3　a. Explain any five operations performed on string with an example. **(10 Marks)**
　b. Demonstrate constructors in inheritance with the help of python program. Take input as student name, subject name, marks of three subjects and calculate the percentage. **(10 Marks)**

OR

4　a. Differentiate between list tuple, sets and dictionary. **(10 Marks)**
　b. Create a function product and demonstrate function overloading by accepting required input and print their product. **(10 Marks)**

Module-3

5　a. Discuss different categories of basic array manipulation with an example. **(10 Marks)**
　b. Implement the python program to demonstrate the following using numpy array.
　　i) Array searching, sorting and splitting
　　ii) Broad casting. **(10 Marks)**

OR

6　a. Discuss in detail about pandas data structures. **(10 Marks)**
　b. Develop a python program to perform arithmetic operations on numpy array. **(10 Marks)**

Module-4

7 a. Explain combining and merging datasets with an example. (10 Marks)
   b. Explain Reshape and pivot operations with an example. (10 Marks)

OR

8 a. Discuss in detail about data transformation. (10 Marks)
   b. Explain any five built-in string methods with an example. (10 Marks)

Module-5

9 a. Write short notes on :
      i) Matplot library
      ii) Seaborn library. (10 Marks)
   b. Implement a python program to demonstrate data visualization using Matplotlib. (10 Marks)

OR

10 a. Explain the following method with an example graph.
      i) hist( )   ii) kdeplot( )   iii) distplot( )   iv) joinplot( ). (10 Marks)
   b. Create a python program to demonstrate data visualization (Line Plot, histogram, Scatter plot) using Seaborn. (10 Marks)

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