B. M. S. College of Engineering, Bengaluru - 560019

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E.   **Semester: V**
Branch: Mechanical Engineering   **Duration: 3 hrs.**
Course Code: 20ME5DEPYP   **Max Marks: 100**
Course: Python Programming   **Date: 13.09.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1. a) Illustrate rules of preference in python programming with suitable examples.   **06**

   b) Write a python program to create a mixed string from given two strings.   **06**

   c) Given a Python list. Write a program to find value 10 in the list, and if it is present, replace it with 500. Only update the first occurrence of an item.   **08**

OR

2. a) Elaborate on exception handling mechanism in python programming with suitable example.   **06**

   b) Illustrate how local and global scope variables can be used in the same code.   **06**

   c) Write a program to remove empty strings from a list of strings.   **05**

   d) Given a two Python list. Write a program to iterate both lists simultaneously and display items from list1 in original order and items from list2 in reverse order.   **03**

UNIT - II

3. a) Write a python code to display all prime numbers within a range.   **05**

   b) Write a python program to display Fibonacci series up to 10 terms.   **05**

   c) Elaborate various file operations supported by python programming. Also write a python program to write List to a File.   **10**

UNIT - III

4. a) Write a python code that return multiple values from a function. **08**

    b) Analyze the following o/p and fill the '?' indices absolutely such that it produces the required o/p. **06**

    str = programiz

    str[?] = p

    str[?] = z

    str[?] = rogr

    str[?] = am

    c) Consider the following scenario "we have data lines with surnames, first names and professions of names as shown below" **06**

    lines = ["surname: Obama, prename: Barack, profession: president", "surname: Merkel, prename: Angela, profession: chancellor"]

    Using regular expression provide a python snippet code that will have solely the surname in the first column, the first name in the second column and the profession in the third column

UNIT - IV

5. a) Illustrate Multiple inheritance in python with suitable example. **10**

    b) Illustrate function mechanism with an example. Also provide scope and lifetime of the variables in the python function. **10**

OR

6. a) Create a Car child class that inherits from the Vehicle class. The default fare charge of any vehicle is seating capacity * 100. If Vehicle is Benz Car instance, we need to add an extra 10% on full fare as a maintenance charge. So total fare for Benz Car instance will become the final amount = total fare + 10% of the total fare. Note: The Benze seating capacity is 5. **10**

    b) Illustrate user define function and what are their advantages. Create a user define function that adds two numbers in python. **10**

7. a) Generate a sequence of numbers in the form of a numpy array from 0 to 100 with gaps of 2 numbers, for example: 0, 2, 4 ... **05**

   b) Write a NumPy program to create a null vector of size 10 and update sixth position to 11. **05**

   c) Considering the following exam dataframe representation answer the following: **10**

   i) Write a Pandas program to get the first 3 rows of a given DataFrame with pre-defined labels.

   ii) Write a Pandas program to replace the 'qualify' column contains the values 'yes' and 'no' with True and False and print the same.

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