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

### Autonomous Institute Affiliated to VTU

## September / October 2023 Supplementary Examinations

Programme: B.E.
Branch: Electronics & Instrumentation Engineering
Course Code: 19EI5PE1PY
Course: PYTHON PROGRAMMING & APPLICATION

Semester: V
Duration: 3 hrs.
Max Marks: 100

**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) Describe the significance of each element in hardware architecture of a computer. **06**

   b) Develop a program for simple calculator for the following functions in Python
   a) Addition  b) Subtraction  c)Multiplication  d)Division  e)$1/x$  f)$x^2$  g)$\sqrt{x}$ **10**

   c) List the rules to declare a variable in Python. **04**

### UNIT - II

2  a) Explain break and continue statements with examples in Python. Write a pythonic code that iteratively prompts the user for input. It should continue until the user enters 'Done' and then return the average value. **10**

   b) What are user defined functions? Discuss the merits of writing functions in Python and write a function to find, the average of best two marks out of three marks taken as input from the user in Python. **10**

### OR

3  a) Describe how catching exceptions are possible using try and except with suitable example **08**

   b) Explain the working of for and while loops in python. Write program to compute counting, summing and average of elements. **12**

### UNIT - III

4  a) Define a string. How it can be traversed through looping statement? Write a program to reverse the given string by the user. **10**

   b) Write a python program to read the file, count and print the lines that starts with the word "1BM19EI". Prompt the user for the file name. Also use try/except to handle bad file names. **10**

## UNIT - IV

5   a)   How lists are created in Python and how it is different from tuples? Write a
         Python function rotatelist (ls,k) that takes a list ls and a positive integer k and
         returns the list ls after k rotations.   **10**

    b)   Define Dictionaries. Implement a program to count the number of occurrence of
         words in a given text file.   **10**

### OR

6   a)   Write a python function that takes two lists and returns True if they have at least
         one common member.   **06**

    b)   Define a tuple. Give an example to illustrate creation of a tuple.   **06**

    c)   Explain any four list methods with suitable examples   **08**

## UNIT - V

7   a)   Write a class Rectangle containing numeric attributes width and height. The
         class should contain another attributes corner which is an instance of another
         class Point. Implement following function
         a) A function to print corner point as an ordered-pair
         b) A function find_center() to compute center point of the rectangle
         c) A function resize() to modify the size of rectangle   **10**

    b)   Create a class called Supermarket and consider the following attributes milk,
         cheese and butter. If the contents are greater than 2 packs of milk, 3for cheese
         and 4 for cheese, then display appropriate message. Write a separate method to
         check for each condition.   **10**

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