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## Sixth Semester B.E. Degree Examination, Jan./Feb. 2023 Python Application Programming

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Identify three types of errors encountered in Python and also explain the basic building blocks of Python program. (07 Marks)
- b. Predict the output and justify your answer (i)  $-13\%9$  (ii)  $6.6//16$  (iii)  $1+2**3/4*5$   
(iv) not "False" (v)  $5*1**3$  (05 Marks)
- c. Develop python programs to, (i) Find largest of three numbers (ii) Check whether the given year is leap year or not with functions. (08 Marks)

OR

- 2 a. Make use of necessary examples and flow chart to explain the concept of alternate execution, chained conditional and nested conditional statements. (08 Marks)
- b. Develop a user defined function named 'Solve' that returns the sum and difference of two numbers accepted from the user. Print the sum and difference separately on the console. (05 Marks)
- c. Make use of necessary code examples to explain the following – (i) Short circuit evaluation of an expression (ii) Fruitful functions and void functions. (07 Marks)

### Module-2

- 3 a. Build a python program to compute counting summing and average of elements using loops. (06 Marks)
- b. Make use of necessary examples to explain any six methods associated with strings. (06 Marks)
- c. Mention the advantages of break and continue statement. Write a program to compute the sum of only odd numbers within the given natural number using continue statement. (08 Marks)

OR

- 4 a. Make use of necessary syntax to explain fileopen, fileclose, fileread and filewrite concepts in python. (08 Marks)
- b. Develop a python program to accept a file name from the user : (i) Display the first N lines of the file, (ii) Find the frequency of occurrence of the word accepted by the user. (08 Marks)
- c. Use find and string slicing to extract the portion of the string after the colon character and then use the float function to convert the extracted string into a floating point number. Assume the following string :  
`str = X-DSPAM-Confidence : 99.94` (04 Marks)

### Module-3

- 5 a. Describe any two list operations and list methods. Develop a python program to accept n numbers from user, find sum of all even numbers and product of all odd numbers in entered list. (08 Marks)
- b. Identify pop and remove methods on lists. How to delete more than one element from a list. (06 Marks)
- c. Identify the difference between list and tuples and also demonstrate (i) How a dictionary item can be represented as a list of tuples, (ii) How tuples can be used as keys in dictionaries. (06 Marks)

OR

- 6 a. Develop a program to check the validity of a password read by the users. The following criteria should be used to check the validity. Password should have at least –
- One lower case letter.
  - One digit.
  - One upper case letter.
  - One special character from (\$#!@)
  - Six characters
- (08 Marks)
- b. Build a python program that accepts a sentence and builds a dictionary with LETTERS, DIGITS, UPPERCASE, LOWERCASE as key values and their count in the sentence as values and their count in the sentence as values.  
Ex : Sentence = "VTU@123.e-Learning"  
d = {"LETTERS" : 12, "DIGITS" : 3, "UPPERCASE" : 4, "LOWERCASE" : 8} (06 Marks)
- c. Develop a python program to count occurrence frequency of words in a file using dictionary. (06 Marks)

**Module-4**

- 7 a. Create a student class and initialize it with name and roll number. Develop method to,
- (i) SetAge – to assign age to student
  - (ii) SetMarks – to assign marks to student
  - (iii) Display – to display all information of the student
- (08 Marks)
- b. Differentiate between pure function and modifier. Develop a python program to find duration of an event if start and end time is given by defining class TIME. (08 Marks)
- c. Demonstrate the concept of operator overloading with a code snippet. (04 Marks)

OR

- 8 a. Make use of necessary examples to explain single, multiple, multilevel and hierarchial inheritance. (08 Marks)
- b. Develop a python program to express instances as return values to define a class RECTANGLE with members width, height, corner\_X, corner\_Y and member functions : to find center, area and perimeter of a rectangle. (08 Marks)
- c. Explain \_\_init\_\_ method with an example. (04 Marks)

**Module-5**

- 9 a. Explain any two socket functions. Explain support for parsing HTML using regular expression with an example program. (08 Marks)
- b. Make use of an example to explain the significance of XML over the web development. (08 Marks)
- c. Compare and contrast the JavaScript object Notation (JSON) and XML. (04 Marks)

OR

- 10 a. Describe creation of database table using database cursor architecture. (08 Marks)
- b. Create a simple spidering program that will go through Twitter accounts and build a database of them. (08 Marks)
- c. What is service oriented architecture? List the advantages of the same. (04 Marks)

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