USN | | | | | | | | | | 18AI52

Fifth Semester B.E. Degree Examination, June/July 2024
Python Programming

Time: 3 hrs.   Max. Marks: 100

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

Module-1

1 a. Each variable used in python programming will have its own scope of visibility. Is it possible to have local and global variables with same name? Justify your answer using a small python code snippet along with the output expected. **(06 Marks)**
   b. How are runtime exceptions handled in python? **(04 Marks)**
   c. Write a small python code to implement the game "Guess the Number". **(10 Marks)**

OR

2 a. List and explain the following operators in detail :
      (i)   Comparison operators
      (ii)   Boolean operators
      (iii)   Mixing Boolean and Comparison operators **(10 Marks)**
   b. Write a python program/code to read the name of a user and his age. Based on the age, the following message to be displayed to the user:
      (i)   If the age is less than 20, then display his name is a message "You are a minor".
      (ii)   If the age is more than 20, but less than 50, then display his name and a message "Your are in your mid age"
      (iii)   If the age is above 50, then display his name and a message "You are in your old age".
      Support your code with corresponding flow chart and a sample output. **(10 Marks)**

Module-2

3 a. Elaborate on Augmented Assignment operators supported in python. **(05 Marks)**
   b. List any 4 methods most frequently used in python and explain them along with their syntaxes in detail. **(10 Marks)**
   c. Explain list slicing concept with an example of your own. **(05 Marks)**

OR

4 a. Define Dictionary. Is it possible to traverse the keys and the Dictionary using a 'for' loop? Justify your answer **(10 Marks)**
   b. Write a python program to accept a sentence and compute the number of words, digits, upper and lower case letters present in it. Display the results with proper messages and sample output. **(10 Marks)**

Module-3

5 a. Write a note on :
      (i)   Greedy and Non Greedy matching.
      (ii)   The findall ( ) method. **(10 Marks)**
   b. Explain the process of file Reading and Writing along with suitable python programming code snippet. **(10 Marks)**

OR

6 a. Write a note on:
   (i)   The Caret and Dollar sign characters
   (ii) The wild card character   (10 Marks)
   b. Write a python program to extract phone numbers and email addresses using RegEx.
                                                                    (10 Marks)

Module-4

7 a. (i)   Define classes, objects and Rectangles in python.   (03 Marks)
   (ii) Elaborate on the concept of pure functions with the help of a python code snippet.
                                                                    (07 Marks)
   b. Using python code snippets, explain the init and _ _ str _ _ methods in detail.   (10 Marks)

OR

8 a. What is operator overloading? Using a python code snippet, explain overloading of basic
       arithmetic operators like +, -, * and / along with expected output sequence.   (10 Marks)
   b. Define Polymorphism. Explain the various ways in which polymorphism concept can be
       handled / applied in python coding.   (10 Marks)

Module-5

9 a. Using suitable python code snippets, explain
   (i)   How to download files from the web using the requests module?
   (ii) How to save the downloaded files to the Hard drive?   (10 Marks)
   b. Write a note on the procedure for retrieving a web page element from a beautiful soap object
       with the help of select method. Using an example python script of your own and explain the
       above concept by passing a string of a CSS selector for the element under observation.
                                                                    (10 Marks)

OR

10 a. Write a note on usage of openPyXL to achieve the following tasks along with supporting
        python coding.
    (i)   Creating and saving Excel documents
    (ii) Creating and Removing sheets.   (10 Marks)
    b. Using a python code snippet, elaborate on the json module of python in detail.   (10 Marks)

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