USN ☐☐☐☐☐☐☐☐☐☐   **16/17MCA21**

Second Semester MCA Degree Examination, June/July 2018
Python Programming

Time: 3 hrs.   Max. Marks: 80

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

Module-1

1   a.   How does a computer run a python program? Explain with a neat diagram.   **(06 Marks)**
    b.   Predict the output of the following code:
         i) len ('it\' s')   ii) 'Computer' + 'Application'
         iii) 'H20' * 3   iv) max(2, -3, min(4, 7), -5)   **(04 Marks)**
    c.   Explain the following:
         i) input( )   ii) Augmented statement   iii) Comment in python   **(06 Marks)**

OR

2   a.   Discuss the usage of the following with respect to the print( ) function:
         i) sep argument   ii) end argument   iii) format   **(06 Marks)**
    b.   Explain and construct the memory model of variable in python for the following assignment
              >>>degree_celsius = 26.0   **(04 Marks)**
    c.   Give the syntax of a user-defined function in python and explain the working with an example.   **(06 Marks)**

Module-2

3   a.   Input an array of n numbers and find separately the sum of positive and negative numbers.   **(06 Marks)**
    b.   Using string method, write an expression that produces:
         i)   The number of o's in tomato
         ii) The index of first occurrence of 'o' in tomato.
         iii) A copy of 'master' capitalized
         iv) Copy of " monday" with the leading whitespace removed.   **(04 Marks)**
    c.   Write a note on: i) Short-circuit evaluation   ii) Comparing strings   **(06 Marks)**

OR

4   a.   Define module. What are the two ways of importing a module? Explain.   **(08 Marks)**
    b.   Define a method. Give the general form of a method call and explain the following string methods with an example:
         i) islower( )   ii) swapcase( )   iii) strip( )
         iv) find(s)   v) count(s)   **(08 Marks)**

Module-3

5   a.   Write a python program to search an element using linear search.   **(08 Marks)**
    b.   Given: fruits = ['Banana', 'Apple', 'Grapes', 'Mango']. Using the concept of slicing write an expression that produces the following:
         i)   First item of fruits
         ii) Last item of fruits
         iii) The list ['Banana', 'Apple', 'Grapes']
         iv) The list ['Grapes', 'Mango']   **(04 Marks)**
    c.   Write a note on processing parallel lists using indices.   **(04 Marks)**

OR

6 a. Using loops, print the following pattern:

    PPPPP
    PPPP
    PPP
    PP
    P   **(04 Marks)**

   b. Explain the following list methods with example:
       i) extend (v)   ii) insert (i, v)   iii) remove (v)   iv) reverse ( )   **(08 Marks)**

   c. Predict the output of the following code:
```
>>> S = 'C3H7'
>>> total = 0
>>> count = 0
>>> for i in range (len (s)):
        if  s[i].isalpha ( ):
            continue
        total = total + int (s[i])
        count = count + 1
…
>>> print (total, count)
```
                                                                   (04 Marks)

Module-4

7 a. How can we use 'with' statement while opening a file? Explain.   **(04 Marks)**
   b. Differentiate between tuples and sets based on their mutability, orderedness and uses.
                                                                   (04 Marks)
   c. Predict the output of the following and explain.
       Given lows = {0, 1, 2, 3, 4}
              odds – {1, 3, 5, 7, 9}
       i) lows-odds   ii) lows and odds
       iii) lows < = odds   iv) lows|odds   **(08 Marks)**

OR

8 a. Write a Python program to read a word and print the number of letters, vowels and percentage of vowels in the word using dictionary.   **(08 Marks)**
   b. Write a python program for the following file operations.
       Press 1 : Open file in read mode
       Press 2 : Open file in write mode
       Press 3 : current position of file pointer
       Press 4 : Reposition the pointer at the beginning.   **(08 Marks)**

Module-5

9 a. Write a note on: i) isinstance ( )   ii) _ _ init_ _ ( )   **(06 Marks)**
   b. Write an object-oriented program to create 2 time objects: current_time and bread_time which contains bread baking time. Include addTime method to display the total time taken by the bread maker to prepare a bread.   **(10 Marks)**

OR

10 a. Write a note on the usage of the module tKinter.   **(06 Marks)**
   b. Explain any six tKinter widgets.   **(06 Marks)**
   c. Write a tKinter program to design a GUI window that has a label of background color green and foreground color white.   **(04 Marks)**

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