CBCS SCHEME

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18MCA32

Third Semester MCA Degree Examination, June/July 2023
Programming using Python

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. With the help of a neat diagram, explain how does a computer run a python program. **(07 Marks)**

b. Predict the output of the following:
i) ℓen ('VTU mca') (ii) 'VTU' + 'MCA'
iii) 'MCA'*4 (iv) min (2, 1, max(4, 7), min (2, −1)) **(04 Marks)**

c. Discuss the following with an example for each:
(i) sep argument (ii) end argument (iii) input( ) **(09 Marks)**

OR

2 a. Trace the function call and explain the memory model of the following code:

```
def f(x):
    x = 2 * x
    return x
x = 1
x = f(x + 1)
```

(08 Marks)

b. Demonstrate any four operations on strings with an example for each. **(08 Marks)**

c. With an example, explain the syntax of a user defined function in python. **(04 Marks)**

Module-2

3 a. Discuss the importance of doc string in testing the code semi-automatically using doc test. **(08 Marks)**

b. Explain how one can create his/her own module in python and import the same in python program. **(08 Marks)**

c. What is the significance of _ _ name_ _ variable? **(04 Marks)**

OR

4 a. Write a python program to find the second largest among three numbers. **(06 Marks)**

b. Write a note on short circuit evaluation. **(06 Marks)**

c. Explain the following string methods with an example for each:
(i) capitalize( ) (ii) count( ) (iii) swapcase( ) (iv) strip( ) **(08 Marks)**

Module-3

5 a. Explain the following methods of list with an example for each:
(i) insert( ) (ii) remove( ) (iii) clear( ) (iv) append( ) **(08 Marks)**

b. What is list of lists? With an example, explain its memory model. **(07 Marks)**

c. Considering an array of n numbers, write a program to find the sum of positive and sum of negative numbers. **(05 Marks)**

OR

6 a. Write a python program to implement binary search algorithm. **(07 Marks)**
b. How a list can be processed using indices? Explain. **(08 Marks)**
c. Discuss the usage of break statement in python. **(05 Marks)**

Module-4

7 a. Explain the read technique and readlines technique to read a file. **(08 Marks)**
b. Write a python program to read a word and print the number of letters, vowels and percentage of vowels in the word using dictionary. **(07 Marks)**
c. Write a note on tuples. **(05 Marks)**

OR

8 a. Explain the following set operations with an example for each:
(i) add( ) (ii) clear( ) (iii) union( ) (iv) remove( ) **(08 Marks)**
b. What is inverting a dictionary? Explain with an example. **(08 Marks)**
c. How readline technique can be used to read a file? **(04 Marks)**

Module-5

9 a. List and explain the different phases which are involved in object oriented programming. **(10 Marks)**
b. Discuss the usage of method isinstance( ) and __init__( ) in python. **(06 Marks)**
c. How a method can be added to a class in python? **(04 Marks)**

OR

10 a. How tKinter module can be used to build simple GUIs in python? **(08 Marks)**
b. Discuss the usage of MVC to build larger GUIs in python with a program. **(08 Marks)**
c. How class, object and variables can be created in python. **(04 Marks)**

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