CBCS SCHEME

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18MCA32

Third Semester MCA Degree Examination, Aug./Sept.2020
Programming using Python

Time: 3 hrs. Max. Marks: 100

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 neat diagram. **(05 Marks)**

b. Give the output of following:
i) 54//17 ii) -17//10 iii) -16 % 5 iv) "S2" * -1 v) 3.5//1.3 **(05 Marks)**

c. Trace the function calls in the following code by using the memory model:

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

(10 Marks)

OR

2 a. Explain inbuilt functions of string in Python with example. **(04 Marks)**

b. Explain and construct the memory model of variables in Python. **(06 Marks)**

c. Write a program to convert temperature from Celsius to Fahrenheit using function. **(06 Marks)**

d. Explain the usage of keywords "end" and "sep". **(04 Marks)**

Module-2

3 a. Define module. What are the 2 ways to import module? Explain. **(06 Marks)**

b. Write a Python program to find given year is leap year or not. **(06 Marks)**

c. Explain any four string object methods. **(08 Marks)**

OR

4 a. Discuss the importance of docstring in testing the code semi automatically using doctest. **(08 Marks)**

b. Write a Python program to find roots of quadratic equation. **(06 Marks)**

c. Write short note on short circuit evaluation performed by Python when evaluating combined comparisons. **(06 Marks)**

Module-3

5 a. Write a Python program to search elements using binary search. **(08 Marks)**

b. Variable kingdoms refers to the list ['Bacteria', 'Protozoa', 'Chromista', 'Plantae', 'Fungi' 'Animalia']. Using slicing or indexing with positive/negative indices. Write the expressions that produce the following:
i) The first item of kingdoms.
ii) The last item of kingdoms.
iii) The list ['Bacteria', 'Protozoa', 'Chromista']
iv) The list ['Chromista', 'Plantae', 'Fungi']
v) The list ['Fungi', 'Animalia']
vi) The empty list. **(06 Marks)**

c. What is list of lists? Explain with example. **(06 Marks)**

OR

6 a. Using nested for loops, print right triangle of the character T. **(06 Marks)**

```
T
TT
TTT
TTTT
```

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

c. Explain the process of modifying lists using memory model. **(06 Marks)**

Module-4

7 a. Explain the techniques for reading files. **(12 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. **(08 Marks)**

OR

8 a. Demonstrate any four methods of Dictionary. **(08 Marks)**

b. Explain the operations performed on sets with example. **(06 Marks)**

c. Write a Python event driven program for file operations:
i) Open file in read mode
ii) Open file in write mode
iii) Current position of file pointer. **(06 Marks)**

Module-5

9 a. With an example, discuss the different components of a tkinter module. **(10 Marks)**

b. List and explain the phase involved in object orient programming. **(10 Marks)**

OR

10 a. Write a short note on: i) isinstance ( ) ii) ___init___( ) **(06 Marks)**

b. Explain the Model View Controller design with the help of tkinter program. **(08 Marks)**

c. Write a GUI application with a button labeled "GoodBye". When the button is clicked, the window closes. **(06 Marks)**

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