

# CBCS SCHEME

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18MCA32

## Third Semester MCA Degree Examination, Jan./Feb. 2021 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. Explain any string functions with examples. (10 Marks)  
b. Give the output of the following:  
i)  $(-(-(-5)))$   
ii)  $5 * 2 * * 3 - 15$   
iii)  $-9 \% 2$   
iv)  $9 \% -2$   
v)  $-17/10$  (10 Marks)

OR

- 2 a. Explain the two ways to use python interpreter. What are error that can be detected by Python? Differentiate between them with one example each. (10 Marks)  
b. Write a python program to find sum of all odd and even numbers from n1 to n2 where n1 and n2 are positive integers. (10 Marks)

### Module-2

- 3 a. Explain how code in python is tested semi-automatically. (10 Marks)  
b. Describe briefly the process of designing your own module with clear example. (10 Marks)

OR

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

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

 (10 Marks)  
b. Write a python function to find the average of two bigger numbers of given three numbers. (10 Marks)

### Module-3

- 5 a. Write a python program to search an element using binary search (Recursive). (08 Marks)  
b. Compare list and string in python. (04 Marks)  
c. Explain any five list methods with example. (08 Marks)

OR

- 6 a. Write a python program to compute sum of diagonals of  $3 \times 3$  square matrix. (10 Marks)  
b. What do you mean by slicing of lists? List and explain the various operations that can be applied on lists. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg.  $42+8 = 50$ , will be treated as malpractice.



**Module-4**

- 7 a. Write a program to read a word and print the number of letters, vowels and percentage of vowels in the word using a dictionary. (10 Marks)  
b. Demonstrate any 6 set operations with examples. (10 Marks)

OR

- 8 a. Write a python program to read contents of a text file and write into another. (10 Marks)  
b. Write a function to create a dictionary where the keys are numbers between 1 and N (both included N is taken as input) and the values are square of keys. Print the contents of the dictionary. (10 Marks)

**Module-5**

- 9 a. Explain MVC design with the help of Tkinter program. (10 Marks)  
b. Write a python class named square constructed by a side and two methods which will compute the area and perimeter of a square. (10 Marks)

OR

- 10 a. Demonstrate the creation of any 5 widgets using Tkinter. (10 Marks)  
b. Explain tkinter based python program for creating a GUI that has a label, entry and a button. The values given in entry field should be updated in label on click of the button. (10 Marks)

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