

# CBCS Scheme

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16MCA21

Second Semester MCA Degree Examination, June/July 2017

## 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. Explain and construct the memory model of variables in Python. (06 Marks)
- c. List any four built – in string functions in Python and explain. (04 Marks)

### OR

- 2 a. Predict the output of the following code and justify your answer :  
City = "Bengaluru"  
City [1] = City [8] = "e"  
City [6] = "0"  
Print (city). (02 Marks)
- b. 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)
- c. Discuss the usage of the following with respect to the print ( ) function  
i) sep argument ii) end argument iii) .format (arguments). (06 Marks)

### Module-2

- 3 a. Predict the output of the following and justify your answer : (04 Marks)  
i) not "False" ii) -17 % 10 iii) (212 – 32) \* 5 / 9 iv) 3.5 // 1.3.
- b. Write a Python program to find average of best two test marks out of three test marks. (04 Marks)
- c. What are the two ways of importing a module? Which one is more beneficial? Explain. (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 the roots of a quadratic equation. (08 Marks)

### Module-3

- 5 a. Consider the list qty = [5, 4, 7, 3, 6, 2, 1] and write the Python code to perform the following operation without using built-in methods :  
i) Insert an element 9 at the beginning of the list ii) Insert an element 8 at the end of the list iii) Insert an element 8 at the index position 3 of the list iv) Delete an element at the beginning of the list v) Delete an element at the end of the list vi) Delete an element at the index position 3 vii) Print the list in reverse order (end to start) viii) Delete all the elements of the list. (08 Marks)
- b. Write the Python program to check whether a given number is prime or not, using for – else statement. (08 Marks)

OR

- 6 a. Give any four differences between a list and a string in Python. (04 Marks)  
 b. Write a Python program to read a string with punctuations and print the same string without punctuations. (08 Marks)  
 c. What is a list of lists? Give an example along with its memory model. (04 Marks)

**Module-4**

- 7 a. How can we use 'with' statement while opening a text file? Explain. (04 Marks)  
 b. Consider the following two sets and write the Python code to perform following operations on them. (04 Marks)
- |                           |                      |
|---------------------------|----------------------|
| i) Union                  | Lows = 0,1, 2, 3, 4  |
| ii) Difference            | Odds = 1, 3, 5, 7, 9 |
| iii) Symmetric difference |                      |
| iv) Intersection          |                      |
- c. Write a Python program to read a word and print the number of letters, vowels and percentage of vowels in the word using a dictionary. (08 Marks)

OR

- 8 a. Store the following data in a list, in a set and in a dictionary. (06 Marks)
- |       |     |    |       |
|-------|-----|----|-------|
| India | USA | UK | Japan |
| 91    | 1   | 41 | 81    |
- b. In what situations are the sets more useful than the lists? (02 Marks)  
 c. Write a Python program to read the contents of a text file and write into another. (08 Marks)

**Module-5**

- 9 a. Write short notes on : i) is instance ( ) ii) \_\_init\_\_ ( ). (04 Marks)  
 b. With an example, discuss the different components of a tkinter program. (06 Marks)  
 c. Write an object oriented Python program to create two 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. (06 Marks)

OR

- 10 a. What are the steps that Python follows while creating an object? (03 Marks)  
 b. Explain MVC design with the help of tkinter program. (08 Marks)  
 c. Write a tkinter program to design a GUI window that has a lable of background color green and foreground color white. (05 Marks)

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