

# CBCS SCHEME

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18MCA32

Third Semester MCA Degree Examination, July/August 2021

## Programming using Python

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

1. a. List out the rules for declaring a variable in Python. Demonstrate any 3 uses of a variable, with example. (06 Marks)  
b. Give the output of the following and justify your answers. (06 Marks)
  - i)  $-9 \% 2$
  - ii)  $9 \% -2$
  - iii)  $4 + 3 * 5 ** 4$
  - iv)  $5 - 2 * 3/6$
  - v)  $((((4 ** 3))))$
  - vi)  $(100 - 70) * 10/5$  (06 Marks)
- c. Write a Python script to find the average of best 2 marks from 3 test marks accepted as input from the user. (08 Marks)
2. a. Discuss on the memory model for storing a variable in python. Explain with example. (06 Marks)  
b. Discuss on the print function for displaying information in Python. (08 Marks)  
c. Explain how to define and call a user defined function in python, using an example. (06 Marks)
3. a. Discuss on the different forms of "if" - statements with syntax and example. (08 Marks)  
b. What are strings in Python? Explain how strings can be accessed using indices with example. (06 Marks)  
c. Explain how to use special characters in strings with suitable example for each. (06 Marks)
4. a. Discuss on the significance of docstrings. (04 Marks)  
b. Define a module. Explain how to create a module and make use of it in python programs. (08 Marks)  
c. Give the output of the following ; with reasons  
  - i) `print ('one\t two\n three\t four')`
  - ii) `>>> a = "Hai ,  
Hello  
How are you"`  
`>>> a`
  - iii) `>>> a.split(',')`  
`>>> a.split('c')`
  - iv) `>>> a = 'Good Morning'`  
`>>> a.count('oo')`  
`>>> a.find('oo')` (08 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.

- 5 a. Explain the working of for and while loop in Python with suitable examples. (08 Marks)  
 b. Give the expressions for performing the following operations on the list  $l = [1, 2, 87, 23, 56, 89]$  using : i) Slicing ii) Negative indexing.  
 i) Reversing the list  
 ii) Print first element from the list  
 iii) Print the last element 89, from the list  
 iv) Print alternate elements from the list starting from 2. (08 Marks)  
 c. Explain any one method of processing lists using for loop with an example. (04 Marks)
- 6 a. Write a Python script to insert an element into a sorted list. (06 Marks)  
 b. What do you mean by aliasing a list? Explain with an example. (06 Marks)  
 c. Demonstrate the use of break and continue statements with a code snippet. (08 Marks)
- 7 a. Discuss on the different methods of opening a file in python, with syntax and example. (06 Marks)  
 b. Write short notes on the different file types supported by python. (05 Marks)  
 c. What is a dictionary? Write a python script to invert a dictionary that contains duplicate values. (09 Marks)
- 8 a. What is a tuple? Explain the following operations on a tuple with example for each :  
 i) Sum of 2 tuples  
 ii) Assignment of tuples to variables  
 iii) Slicing a tuple  
 iv) Comparison of tuples. (10 Marks)  
 b. Write a python script to read the contents of a file and display the contents in the following format.
- | Input file   | Output                |
|--------------|-----------------------|
| Good Morning | Line 1 : Good Morning |
| How are you  | Line 2 : How are you  |
| Welcome      | Line 3 : Welcome      |
- c. Compare the collection objects lists and strings. (06 Marks)  
 (04 Marks)
- 9 a. Discuss on object class and isinstance() method with an example. (05 Marks)  
 b. Write short notes on the various phases involved in object oriented programming. (06 Marks)  
 c. What is inheritance? Explain how python supports inheritance with an example. (09 Marks)
- 10 a. Discuss on the different ways of managing the layout of widgets in a tkinter GUI program. (10 Marks)  
 b. Explain any 10 GUI widgets with respect to tkinter. (10 Marks)

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