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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Seventh Semester, B.E. - Information Science and Engineering

Semester End Examination; Dec. - 2019

Introduction to Python Programming

Time: 3 hrs

Max. Marks: 100

Note: Answer **FIVE** full questions, selecting **ONE** full question from each unit.

UNIT - I

- 1 a. Discuss about the software used in coding process in modern computer system. 8
- b. Give the output of following expressions: 6
- ```
>>> 8/12 >>> 8//13 >>> 3+4*5
>>> round(23.67) >>> 2**3**2 >>> 15%2
```
- c. List and explain all the escape sequences in python. 6
- 2 a. Explain the steps involved in interpreting a python program. 8
- b. Write a program to compute area of a circle. This program should request a number from the user. 4
- c. Illustrate about numeric data types and character sets with example. 8

### UNIT - II

- 3 a. Predict the output for the following code: 6
- ```
Assume fruit = "banana"
>>>len(fruit)
>>> fruit[1]
>>> fruit[len(fruit)]
>>>fruit [::-1]
>>>fruit [:3]
>>>fruit [3:]
```
- b. Write a python program to find maximum and minimum of two input numbers, accept the input from a user. 6
- c. Explain multiway selection statement. Write a python program to compute grade of a student for a data given below, 8

Grade	Range of numeric grades
A	All grades above 89
B	All grades above 79 and below 90
C	All grade above 69 and below 80
F	All grades below 70

- 4 a. Write a python program to compute factorial of a given integer 'N' using while loop. 6
- b. Write a program to Encrypt and Decrypt a string using Caesar Cipher method. 10
- c. Write the values for the following expressions, consider $x = 3$ and $y = 5$:
- >>> $x == y$ >>> $x > y - 3$ 4
- >>> $x == y$ or $x > 2$ >>> $x != 6$ and $y > 100$

UNIT - III

- 5 a. List and explain some of the operators and functions used with List in python. 10
- b. Explain List methods with examples. 10
- 6 a. Write the values for python statements for the following, consider variable $data = [5, 3, 7]$:
- >>> $data[2]$ >>> $data[-1]$ >>> $len[data]$
- >>> $data[0:2]$ >>> 0 in $data$ >>> $data + [2,10,5]$
- >>> $tuple(data)$ 10
- i) Add value 10 at to end of the data
- ii) Insert value 22 at position 2 in data
- iii) Remove value at position 1 in data
- b. Explain python dictionary operations with examples. 10

UNIT - IV

- 7 a. Describe the attributes of turtle. 4
- b. Design a course management application that needs to represent information about students in a course. Each student has a name and a list of test scores. Write a student class which allows user to view a student's name, test score at a given position, reset a test score at a given position, view highest and average test score, and obtain string representation of student's information. 12
- c. List any four turtle methods. 4
- 8 a. Write a function named draw square which draws a square with the given turtle t , an upper left corner point (x, y) and a side's length? 6
- b. Explain the image methods supported in python. 10
- c. Write a note on `__init__` method in python. 4

UNIT - V

- 9 a. Write a short note on the following:
- i) Time-sharing operating systems ii) Multiprocessing systems 10
- iii) Networked (or) distributed systems iv) Parallel systems
- b. Explain the states in life cycle of a thread. 10
- 10 a. Explain two-way chat script in client server programming. 10
- b. Explain model, view and controller pattern. 10