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

(An Autonomous Institution affiliated to VTU, Belagavi)

Third Semester, Master of Computer Applications (MCA)

Semester End Examination; Feb. - 2021

Python Programming

Time: 3 hrs *Max. Marks: 100*

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

UNIT - I

1 a. What is a type? Explain any three data types used in Python with an example. 7

b. Explain the arithmetic operator's precedence in Python to evaluate an expression with suitable example. 7

c. Write a user defined function named 'Calculate' that returns the remainder and quotient. 6

2 a. Trace the below given function call in memory model; 6

```
def Sqr(x)
    x = x * x
    return(x)
x = 10
x = Sqr(x)
print(x)
```

b. Explain the operations performed on strings with example. 8

c. How to print information on screen in Python? Explain with an example. 6

UNIT - II

3 a. Write a Python program to someone's risk of heart disease using the following rules based on Age and Body Mass Index (BMI) using 'nested if' : 6

		Age	
		< 45	≥ 45
BMI	< 22.0	Low	Medium
	≥ 22.0	Medium	High

b. Write a note on; 9

i) Short-Circuit Evaluation

ii) Comparing Strings

iii) Test your Code-Semi automatically

c. Define module. Write a program to convert temperature from Fahrenheit to Celsius by defining your own module. 5

[Note: driver program should import your own created module].

4 a. Explain any five sting methods used in Python. 10

b. Discuss the importance of underscore in Python. 5

Contd…2

c. Write the expression in Python to perform the following; 5

i) To produce the floor of –2.8

ii) To round the value of –4.3 and then produces the absolute value of that result

iii) To produce the ceiling of the sine of 34.5

UNIT - III

5 a. List and explain the any five 'list' methods with example. 10

b. Consider the following list:

l = [1, 7, 9, 12, 16]. Give the output of the following: 6

i) *l*[1:3] ii) *l*[0:–1] iii) *l*[::–1] iv) *l* [–1:4] v) *l*[:] vi) *l*[:4]

c. "Lists are Heterogeneous" support the statement with example. 4

6 a. Explain the following: 12

i) Processing characters in a String

ii) Processing parallel lists using indices iii) Break statement

b. Write a Python program to read *N* numbers, which includes both positive and negative numbers and produce the resultant list containing only positive numbers. 6

[i.e,: Input List:[1, 2, –3, 4, –2, 10], Output List:[1, 2, 4, 10]].

c. Predict the output of the following code 2

```
>>> S = 'H2αH4'
>>> total = 0
>>> count = 0
>>> for i in range(len(S)):
        if S[i]. isalpha():
            continue
        total = total + int (S[i])
        count += 1
>>> print(total, count)
```

UNIT - IV

7 a. Discuss the different techniques for reading files in Python. 10

b. Write a Python program to count numbers of words in a file. 5

c. Demonstrate the assignment of multiple variables using Tuples. 5

8 a. Demonstrate any five set operations with example. 10

b. Describe the process of looping over dictionary with suitable example. 4

c. Explain the uses of 'in' operator on Tuples, Sets and Dictionaries with example 6

UNIT - V

9 a. Write a note on; 10

i) Using a database server ii) Creating the tables

b. Explain the Django architecture with a neat diagram. 10

10 a. Discuss the Templates filters and tags with example. 12

b. List and explain the Django's rich field types. 8

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