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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; Dec. - 2019

Python Programming

Time: 3 hrs

Max. Marks: 100

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

UNIT - I

- 1 a. Explain the following with the help of an example:
- | | | | |
|-------------|-------------|------------------------|----|
| i) len() | ii) input() | iii) comment statement | 10 |
| iv) print() | v) max() | | |
- b. Assume that the string '**Python: Programming**' is assigned to a variable *w*. What will be the output when we execute the following commands and explain: 10
- w*[4], *w*[4:], *w*[:8], *w*[3:10], *w*[:]
- 2 a. Trace the function call for the following code using memory model:
- ```
def f(x):
 x = x * 2
 return (x)
x = 1
x = f(x+1) + f(x+2)
```
- b. Demonstrate any five functions of string methods with the help of an example. 10

### UNIT - II

- 3 a. Define module. Write a program to find the Fibonacci of a given number by defining your own module (Note: Driver program should import the created module). 8
- b. Discuss about the process of combined comparisons. Write a note on short circuit evaluation performed by the Python when evaluating combined comparisons. 6
- c. Explain the use of underscore in Python. 6
- 4 a. Explain the different conditional statements available in Python with the help of an example. 10
- b. Using your factorial function, write a function that estimates the value of the mathematical constant *e* using the formula: 10
- $$e = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \dots n \text{ terms}$$

### UNIT - III

- 5 a. Explain the process of modifying lists by using a memory model. 10
- b. List and explain any five list functions with appropriate examples. 10

- 6 a. Develop a script for filtering prime and non-prime numbers into separate lists from a list of numbers. 12
- b. Demonstrate the usage of break, continue and pass statements with the help of an appropriate example. 8

#### UNIT - IV

- 7 a. Explain with the help of an example the different functions used with files. 10
- b. Explain how data is stored in sets and tuples with the help of examples? 10
- 8 a. Write a program that asks the user for a file name and then prints the number of characters, words and lines in the file. 8
- b. What are dictionaries? Explain any five functions used with dictionaries with the help of examples. 12

#### UNIT - V

- 9 a. Explain in detail the Model, View and Template layers of Django architecture. 8
- b. Write note on;
- i) Creating the tables in Django 12
  - ii) Django's rich field types
- 10 a. Describe the various steps in developing a web application in Django with a database. 10
- b. Develop a Django web application which displays the list of students who belong to a particular semester by reading the semester from user. 10

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