



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

(An Autonomous Institution affiliated to VTU, Belagavi)

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

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. | How does a computer run a Python Program? Explain with a neat diagram. | 7 |
| b. | How to add a function in python? Explain with example. | 7 |
| c. | Describe the two ways of using interpreter to execute python program. | 6 |
| 2 a. | Write a function called circle that takes a turtle t and radius r as parameter and that draws an approximate circle by invoking polygon with an appropriate length and number of sides. | 8 |
| b. | Explain the three kinds of errors in a program. | 6 |
| c. | Describe math function with example. Write a program to find the area of the circle importing math. | 6 |

UNIT - II

- | | | |
|------|---|---|
| 3 a. | Explain chained and nested conditional in python along with example. | 6 |
| b. | Write a program to find factorial of a number using recursion, read the number from a user and check for all the cases. | 6 |
| c. | Draw a stack diagram for the following program. What does the program print? | |

```
def b(z):
```

```
    product = a(z, z)
```

```
    print (z, prod)
```

```
    return prod
```

```
def a(x, y):
```

```
    x = x+1
```

```
    return (x*y)
```

```
def c(x, y, z):
```

```
    total = x + y + z
```

```
    square = b(total) **2
```

```
x = 1
```

```
y = x + 1
```

```
print(c(x, y + 3, x + y))
```

- | | | |
|------|---|----|
| 4 a. | Explain different string methods in python with example. | 10 |
| b. | Is string immutable in python? Justify with example. | 5 |
| c. | Assume that the variable "ALL IS WELL" refer to a string. Write a loop that prints each character in this string followed by ASCII value. | 5 |

UNIT - III

- 5 a. Differentiate between Tuples and Dictionary and List and Tuples with example. 12
- b. Consider the list Q = [5, 4, 7, 3, 6, 2, 1] and write the python code to perform the following operation without using build-in fuctions/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 8
 - iv) Delete an element at the end of the list
 - v) Delete an element at the beginning of the list
 - vi) Delete an element at the index position 3
 - vii) Print the list in reverse order (end of the start)
 - viii) Delete all the elements of the list
- 6 a. Write a python program to replace last value of tuples in a list. 6
 Sample list : [(20, 40, 50) (60, 70, 80) (90, 100, 120)]
 Expected outcome: [(20, 40, 200), (60, 70, 200) (90, 100, 200)]
- b. Write a C program to concatenate two dictionaries to create a new one. Initialize dic and dic2 key- value pair as per your choice. 6
- c. Write a program to count the number of string where the string length is 2 or more and the first and last character are same from a given list of string. 8

UNIT - IV

- 7 a. Write a python program to read a file line by line and store it in to a list. 8
- b. Define the following:

i) Relative path	ii) Absolute path	iii) Shallow copy	
iv) Deep copy	v) Instance	vi) Class	

12
- 8 a. Define a new class called rectangle with appropriate attribute and instantiate a few rectangle objects. Write a function called draw-rectangle that draws rectangle on the Canvas. 10
- b. Write a function called distance between points that take two points as arguments and return the distance between them. 5
- c. Justify that object one mutable, and copying an object is often an alternative to aliasing 5

UNIT - V

- 9 a. Explain opertor overloading and type based dipatch operation in python. 10
- b. Create a class called deck that generates the standrad set of fifty two cards and print the deck using --str-- method. 10
- 10 a. Explain in brief with example about card objects and class attributes and represent them in object diagram. 8
- b. Write a definition for a class named Kangaroo with the following methods:
 - i) An --int -- method that initializes an attribute named pouch-Contents to an empty list
 - ii) A method named put-in-pouchr that takes an object of any type and adds it to pouch parameter 12
 - iii) A --str-- method that returns a string representatin of the Kangaroo object and contents of the pouch. Create two Kangaroo objects, assigning them to variables named Kange and roo, and then adding roo to the contents of Kanga's pouch.