



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

(An Autonomous Institution affiliated to VTU, Belagavi)

**Sixth Semester, B.E. - Computer Science and Engineering**

**Semester End Examination; August- 2023**

### Python Programming

Time: 3 hrs

Max. Marks: 100

#### Course Outcomes

The Students will be able to:

CO1: Develop python programs using modular approach.

CO2: Demonstrate proficiency in handling Strings and File Systems.

CO3: Implement Python Programs using data structures.

CO4: Develop application using object oriented and database concepts.

CO5: Create graphical user interface for the applications.

**Note: I) PART-A is compulsory. Two marks for each question.**

**II) PART-B: Answer any Two sub questions (from a, b, c) for a Maximum of 18 marks from each unit.**

Q. No.	Questions	Marks	BLs	COs	POs
<b>I : PART - A</b>		<b>10</b>			
1 a.	Boolean values in python are ___ and ___.	2	L2	CO1	PO1
b.	Illustrate any 4 string comparison operators.	2	L2	CO2	PO1
c.	Write any 3 advantages of tuple over list.	2	L1	CO3	PO1
d.	With example, explain multilevel inheritance.	2	L2	CO4	PO1
e.	List any 6 turtle methods.	2	L1	CO5	PO1
<b>II : PART - B</b>		<b>90</b>			
<b>UNIT - I</b>		<b>18</b>			
2 a.	Write a program to calculate the sum of three given numbers. If the values are equal print their sum otherwise print the square of the sum.	9	L3	CO1	PO2
b.	Define a function check_prime( ) that return 1 if the argument passed to it is prime number and 0 otherwise. Use this function to write a python program to check whether a given number is prime or not.	9	L3	CO1	PO3
c.	Write a program to calculate the roots of a quadratic equation.	9	L3	CO1	PO2
<b>UNIT - II</b>		<b>18</b>			
3 a.	With example, explain any 4 built – in string methods. Write a program to count the occurrences of character in a given string.	9	L2,3	CO2	PO2
b.	With syntax explain open ( ) function. Write a python program to perform the following operations: Read a file content and copy only the content at odd lines into a new file.	9	L3	CO2	PO3
c.	“Python strings are immutable”, justify this statement. Write a program to remove the characters which have odd index values in a given string.	9	L3	CO2	PO2

**UNIT - III****18**

- 4 a. List and explain any 4 methods of list data structure. Write a python program to remove all duplicates from a list. 9 L2,3 CO3 PO2
- b. Define dictionary data structure. Write a program to create a dictionary of radius of a circle and its area. 9 L3 CO3 PO2
- c. With example, illustrate any 6 basic operations on tuples. Write a program to swap values using tuple assignment. 9 L2 CO3 PO2

**UNIT - IV****18**

- 5 a. With syntax and examples, explain the following concepts related to OPP:
- i) Creating object 9 L2 CO4 PO1
- ii) Private variables
- iii) Class variables and object variables
- b. Create a class Rectangle that has attributes length and breadth and define the following methods:
- i) get\_data ( ) : to read attributes 9 L3 CO4 PO2,3
- ii) get\_print ( ) : to print the data
- iii) cal\_Area ( ) : to find area of rectangle
- Write a python program to calculate the area of rectangle.
- c. Write a program to create a SQLite database in the file Stuinfo.db that contains a table called Student with fields SID, name, sem, percentage – of – marks. Insert atleast 3 records to the table and display the details of a specified student based on SID.

**UNIT - V****18**

- 6 a. Write a program to convert an image to black and white image and gray scale image by defining the following functions:
- i) Convert\_an\_image\_to\_black and white 9 L3 CO5 PO2,3
- ii) Convert\_an\_image\_to\_gray scale
- b. With syntax explain the methods of images module. 9 L2 CO5 PO1
- c. Define event driven programming. Write and explain the template of all GUI programs. 9 L2 CO5 PO1

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