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P.E.S. College of Engineering, Mandya - 571 401
 (An Autonomous Institution affiliated to VTU, Belagavi)
Second Semester, B.E. - Semester End Examination; May / June - 2019
C and Basics of Python Programming
 (Common to All Branches)

Time: 3 hrs

Max. Marks: 100

Course Outcomes

The Students will be able to:

CO1: **Understand** and **Apply** the knowledge of program construct in solving a problem.

CO2: **Analyze** the given scenario and write the suitable pseudo code.

CO3: **Design** and **Develop** solution to a real time problems.

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

Q. No.	Questions	Marks	COs	BL	POs
UNIT - I					
1 a.	Explain the basic structure of a C program along with an example to compute the area of a circle.	10	CO1	L2	PO1
b.	Define a flow chart and illustrate the various symbols used to draw a flowchart. Draw a flowchart to find the area of the triangle given three sides.	10	CO2	L3	PO1
2 a.	Explain the following operators in C along with suitable examples : i) Arithmetic operators ii) Relational operators iii) Logical operators	10	CO2	L2	PO2
b.	Write an algorithm to reverse a four digit integer number.	10	CO2	L3	PO2
UNIT - II					
3 a.	Write a program to simulate a simple calculator using switch statement for float type data.	10	CO3	L4	PO3
b.	Write the general syntax and flowchart for; i) If else statement ii) else ...if ladder	10	CO1	L3	PO1
4 a.	Write a C program to identify and display appropriate message on the screen, so as the characters entered is an alphabet, digit or special character.	10	CO1	L3	PO1
b.	With the help of examples, explain getchar(), putchar(), scanf() and printf() statements used in C.	10	CO1	L2	PO1
UNIT - III					
5 a.	Write a C program to find the sum of four digit integer using do-while statement and also write any three difference between while and do-while statement.	10	CO1	L3	PO1
b.	Write a C program to sort n elements using selection sort.	6	CO2	L3	PO2

- c. Write a C program using for loop to print,
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1
2 3
4 5 6

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- 4 CO3 L3 PO2
- 6 a. Write a C program to find the sum of the matrices, and display the same. 10 CO1 L4 PO3
- b. Illustrate the different ways of initializing two dimensional arrays, with suitable examples to show the content of memory. 6 CO1 L1 PO1
- c. Write a C program to generate  $n$  prime numbers. 4 CO3 L3 PO3

#### UNIT - IV

- 7 a. Explain the following string handling functions with suitable examples : 10 CO1 L1 PO1  
 i) strcpy      ii) strcmp      iii) strlen      iv) strcat
- b. Write a program using function to search for a given element in an array using binary search. 10 CO2 L3 PO2
- 8 a. Write any five differences between Structure and Union. 5 CO1 L2 PO1
- b. Explain the different elements of user defined functions, with suitable example. 10 CO1 L1 PO1
- c. Write a C program to check a given string is palindrome or not, without using function. 5 CO3 L4 PO3

#### UNIT - V

- 9 a. List the different data types supported by Python, with example and also explain the different types of operations that can be performed on type int. 10 CO1 L1 PO1
- b. Write a Python program to print the roots of a Quadratic equation. 10 CO3 L4 PO2
- 10 a. Write a program to classify a given integer as being positive integer, negative integer or zero using Python. 7 CO1 L4 PO1
- b. Write a program using while loop to check whether a given number is prime or not in Python. 8 CO2 L4 PO1
- c. Define the following : 5 CO2 L1 PO2  
 i) Loop      ii) Finite loop      iii) Infinite loop  
 iv) Definite loop      v) Indefinite loop

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