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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; July / Aug. - 2022
C and Basics of Python Programming
(Common to all Branches)

Time: 3 hrs   *Max. Marks: 100*

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

Q. No.	Questions	Marks
	I : PART - A	**10**
I a.	Write an algorithm to check whether a number is even or odd.	2
b.	List out the various control statements used C language.	2
c.	List out any two uses of arrays.	2
d.	List out any four string handling functions.	2
e.	List out any four features of python language.	2
	II : PART - B	**90**
	UNIT - I	**18**
1 a.	Define flowchart. List out the symbols used for writing flowchart. Write a flowchart to find the smallest of two numbers.	9
b.	Explain the basic structure of C program? Write a 'C' program to find x where $x = \sqrt{a^2 + 2b^2}$.	9
c.	Explain with an example; i) Relational operators ii) Bitwise operators	9
	UNIT - II	**18**
2 a.	Write a program to find the roots of a quadratic equation using switch statement.	9
b.	Explain with an syntax; i) If – else statement ii) Switch statement	9
c.	Explain with an example printf( ) statement and write a 'C' program to check whether a given number is positive, negative or zero using else – if ladder statement.	9
	UNIT - III	**18**
3 a.	Write a 'C' to find the sum of the numbers for the following series: $1^2 + 2^2 + 3^2 + 4^2 + \ldots\ldots n^2$	9
b.	Write any five differences between while and do-while and write a "C" program to check whether a number is prime or not.	9
c.	Define array. How to declare and initialize ID array? Write a 'C' program to read an array of 'N' elements and perform linear search.	9

UNIT - IV **18**

4 a. List and explain any four string handling functions. 9

b. Write a 'C' program using functions:

 i) To read an array of 'N' integer elements

 ii) Sort an array elements using bubble sort   9

 iii) display sorted elements

c. Define structure. How to declare and initialize structure? Write any five major differences between structure and union.   9

UNIT - V **18**

5 a. List any five applications of Python language. Write a Python program to check whether a give number is positive or negative.   9

b. Explain the syntax of the following statements in Python:

 i) While statement   9

 ii) if statement

c. Explain the history of Python language and write a Python program to check whether a given number is even or odd by accepting an input from the user.   9

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