



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

(An Autonomous Institution affiliated to VTU, Belagavi)

**First Semester, B.E. - Semester End Examination; May - 2022**

## 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 pseudocode.

CO3: Design and Develop solution to a real time problem.

**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
<b>I : PART - A</b>		<b>10</b>
I a.	Mention the symbols used to represent decision making and I/O processing in flow chart.	2
b.	Using ternary operator write the statement to find the biggest of three numbers.	2
c.	Mention the usage of the function strcpy( ) and strcat( ).	2
d.	Write the differences between structure and unions.	2
e.	What is the output of the following program?  <pre style="margin-left: 20px;">i = 0 ; while i &lt; 3:     print(i)     i = i + 1 print(i + 1)</pre>	2
<b>II : PART - B</b>		<b>90</b>
<b>UNIT - I</b>		<b>18</b>
1 a.	Define algorithm. Write an algorithm to check the number given is Prime or not.	9
b.	Define C tokens and give example for each. List out the rules used to define a variable.	9
c.	Explain the following with suitable example: i) Arithmetic operators ii) Bitwise operators iii) Relational operators	9
<b>UNIT - II</b>		<b>18</b>
2 a.	Explain the formatted input and output functions with example. Write a C program to check whether the character entered is a vowel or consonant.	9
b.	Write the syntax of else if ladder. Write a program to find the roots of a quadratic equation.	9

- c. With general syntax, explain switch statement. Write a program to compute the grade of a student ('S' grade – marks  $\geq 90$ , 'A' – 70 to 89, 'F' < 40, 'B' – 60 to 69, 'C' – 50 to 59, 'D' – 40 to 49 ). 9

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

- 3 a. i) Write a C program to find whether the given number is palindrome or not. 6  
 ii) Write a C program to perform linear search operation to search the element given is present in the array or not. 8
- b. i) Write a C program to find the transpose of a matrix. 6  
 ii) Write a C program to find the product of two order ( $m \times n$ ) matrices. 8
- c. Differentiate between while and do-while loop. 4

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

- 4 a. i) Write a C program to concatenate two strings without using string built in function. 7  
 ii) Write a user defined functions to perform binary search on an array of size  $N$ . 7
- b. i) Define a structure called employee with data members emp\_id , name and salary. 8  
 Write a C program to sort the details of employee based on emp\_id.
- ii) Write a C program to find sum of array of ' $n$ ' elements using user defined function. 6
- c. Write a C program to swap two elements using call by reference method. 4

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

- 5 a. List and explain features of python. 9
- b. Write a python program to find the factorial of a given number. 9
- c. Write a python program to display first  $n$  prime number. 9

\* \* \*