



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

(An Autonomous Institution affiliated to VTU, Belagavi)

First Semester, B.E. - Make-up Examination; July- 2022

Problem Solving Through C

(Common to All Branches)

Time: 3 hrs

Max. Marks: 100

Course Outcomes

The Students will be able to:

CO1: Compose step by step procedure /flow diagram to solve a given problem.

CO2: Identify the right data types based on the requirements of the problem.

CO3: Apply suitable programming constructs of C language and/or suitable data structures to solve the given problem.

CO4: Analyse and Identify the errors in given code snippet and determine the output.

CO5: Design and develop solutions to problems using structured or modular programming concept.

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
	I : PART - A	10			
I a.	Write algorithm to divide one number by another and find the quotient.	2	L4	CO1	PO4,2
b.	What is the output of the following program? <pre>main () { int a, b, c, d; float ratio; printf("enter four integer values \n"); scanf("%d %d %d %d", &a, &b, &c, &d); if (c-d!=0) { ratio=(float)(a+b)/(float)(c-d); printf("Ratio=%f \n; rat");}}</pre>	2	L4	CO2	PO3
c.	Define the concept of arrays.	2	L2	CO3	PO1
d.	What is the output of the following code <pre>#include <stdio.h> stmet sample { int a = 0; char b='A'; float c=10.5; } stmet sample s; printf ("%d, %c, %f", s.a, s.b, s.c); return 0; }</pre>	2	L2	CO4	PO3

Contd... 2

- e. What will be the output of the program?

```
#include <stdio.h>
```

```
int main ()
```

```
{
```

```
int i=3, *j, k;
```

```
i=&i;
```

```
printf(“%d\n”,i**j*i+*j);
```

```
return 0;
```

```
}
```

2 L1 CO5 PO3

II : PART - B

90

UNIT - I

18

- 1 a. Define algorithm. Write an algorithm and flowchart to find the area of circle. 9 L1,6 CO1 PO1,2
- b. What is a constant? discuss different types of constants supported in C 9 L1,2 CO1 PO1,2
- c. Write and explain basic structure of C program. 9 L2 CO1 PO2,3

UNIT - II

18

- 2 a. Write syntax of switch statement and also write a C program to implement a simple calculator using switch. 9 L2,4 CO2 PO1,2,3
- b. Explain break and continue statement with example. 9 L2 CO2 PO1,2,3
- c. Write a C program to find the biggest of three numbers. 9 L4 CO2 PO1,2,3

UNIT - III

18

- 3 a. What is an array? How two dimensional arrays is declared and initialized in different ways? Explain with example. 9 L1,4 CO3 PO1,2
- b. Explain any four string handling functions. 9 L2 CO3 PO1,2
- c. Write a C program to perform binary search using array. 9 L4 CO3 PO2,3

UNIT - IV

18

- 4 a. i) What is function? Explain the user defined and pre-defined functions. 5 L1,2 CO4 PO1,2
- ii) Explain call by value and call by reference with an example. 4
- b. What is recursion? Write a C program to find factorial of given number using function. 9 L1,4 CO4 PO1,2
- c. Explain with an example how structures are declared and initialized? 9 L4 CO4 PO1,2

UNIT - V

18

- | | | | | | |
|------|--|---|------|-----|-------|
| 5 a. | What is pointer? Explain how to declare and initialize pointers? | 9 | L4,4 | CO5 | PO1,2 |
| b. | Illustrate with syntax: | | | | |
| | i) Creation of the new file | | | | |
| | ii) Opening of existing file | | | | |
| | iii) Reading from the file | 9 | L4 | CO4 | PO1,2 |
| | iv) Writing to the file | | | | |
| | v) Deleting the file | | | | |
| c. | Write a C program to read name and marks of 'N' number of students and store them in a file. | 9 | L6 | CO5 | PO1,2 |

* * *