



R22 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A' Grade)

Subject code: 4B1AM

B.Tech I Semester Regular Examinations, March/April 2023

PROBLEM SOLVING USING C PROGRAMMING (INFORMATION TECHNOLOGY)

Maximum Marks: 60

Date: 12.04.2023 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x1M=10 Marks)

1. a List different problem solving techniques?
b What is the general structure of a C program?
c Name the four storage classes in C?
d Define a one-dimensional, 12-element integer array called c. Assign the values 1, 4, 7, 10, . . . , 34 to the array elements?
e Write the output of the following program?

```
#include<stdio.h>
int funct1(int count);
main()
{
    int a, count;
    for(count=1; count<=5; ++count)
    {
        a=funct1(count);
        printf("%d", a);
        printf("\n");
    }
}
```

```
int funct1(int x)
{
    int y;
    y=x * x;
    return(y);
}
```

- f Explain the Syntax:
`char *strcat(const char *string1, char *string2);`
`strcat(string1, string2);`
- g How is a pointer variable declared?
- h Can an array have structures as elements?
- i Contrast the use of the `fscanf` and `fprintf` functions with the use of the `scanf` and `printf` functions?
- j What is the scope of a preprocessor directive within a program file?

Part-B

(5X10M=50Marks)

Answer All the following questions.

- 2 a) Elucidate the four basic data types in C? [5M]
b) Elucidate type conversion in C? [5M]
- OR
- 3 a) Describe different types of operators that are included within the C? [5M]
b) Write formatted and unformatted Input and Output operations? [5M]
- 4 a) Construct the Linear search Algorithm for finding a key? [5M]
b) Declare a two dimensional array of size 15 & 5. Write C-Program to declare and read elements into the two dimensional array? [5M]
- OR
- 5 a) What is Array? Explain 1-D ,2-D Arrays with example and applications of arrays? [5M]
b) Write a C program to sort given list of numbers using selection sort? [5M]
- 6 a) Explain Parameter Passing Techniques and differentiate between them? [5M]
b) Write a function to reverse a given string and check whether the given string is palindrome? [5M]
- OR
- 7 a) Explain how arrays are passed to a functions with example program? [5M]
b) Discuss various String library Functions? [5M]
- 8 a) Define Pointer. Explain Declaring and Initializing pointer and write the uses of pointer? [5M]
b) Difference between Structure and Union with examples? [5M]
- OR
- 9 a) Explain pointer to array in C? [5M]
b) Write a C program on student details Name, Roll no. and Marks obtained in four subjects. [5M]
- 10 a) What are basic file operations with example programs? [5M]
b) Write a note on Graphics Functions? [5M]
- OR
- 11 a) Write a C program to copy the contents of one file into another? [5M]
b) Write a note on preprocessor directives? [5M]