



R22 Regulation

Subject code:4B1AM

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech I Semester Supplementary Examinations, July 2025

PROBLEM SOLVING USING C PROGRAMMING

(IT)

Maximum Marks: 60

Date: 18.07.2025

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 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)		Marks	CO	BTL
1 a	Differentiate between keywords and identifiers in C.	1M	1	L1
b	What is the difference between variables and constants?	1M	1	L1
c	What happens if there is no break in a switch case?	1M	2	L1
d	How does the continue statement work in a loop?	1M	2	L1
e	What is the difference between a character array and a string in C?	1M	3	L1
f	How does the null character \0 play a role in string termination?	1M	3	L1
g	What are dangling pointers?	1M	4	L1
h	How is a structure defined within another structure?	1M	4	L1
i	How can we open a file with append mode	1M	5	L1
j	How can macros improve program readability?	1M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	a) Evaluate the following expression in C with the values P=5, Q=20, R=15. $P + (Q * R / P) * P + Q * R$. b) Explain in detail about various operators with examples each.	5M 5M	1	L2
OR				
3	a) Differentiate between top-down and bottom-up approaches to problem-solving. b) What is an unsigned integer constant? What is the significance of declaring a constant as unsigned.	5M 5M	1	L2
4	a) Define an Array. What are the advantages of Arrays? How to declare and initialize string values using arrays in C? b) Write a program to obtain the sum of the first and last digits of the given integer number.	5M 5M	2	L2
OR				
5	a) Write a C Program to Convert a Binary Number to a Decimal Number. b) Explain briefly about repetition statements in C with clear syntax and examples.	5M 5M	2	L2

6	a) Explain the following i) Function with no argument and no return value ii)Function with arguments but no return value iii)Function with no arguments but returns a value iv) Function with arguments and return value.	10M	3	L2
OR				
7	a) Write a C program that uses functions to insert a substring into a given main string at a given position. b) Write a program to find the second smallest element in an given array.	5M 5M	3	L2
8	a) Explain the general format for declaring and accessing members of a structure with an example C program for generating grades of students in a class. b) What is a union in C, and how is it declared? Write a program to demonstrate the use of a union.	5M 5M	4	L2
OR				
9	a) Write a program that uses a structure called date that has is passed to an is leap year function to determine if the year is a leap year. b) What are pointers to functions? Explain. Write a program to swap to numbers using pointer and function.	5M 5M	4	L2
10	a) Write a program in C that copies the contents of one file to another file b) What are command-line arguments, and how are they passed to a program?	5M 5M	5	L2
OR				
11	a) Write a C program to display the contents of the file in reverse order. b) What is conditional compilation, and why is it useful? How can conditional compilation be used for debugging?	5M 5M	5	L2