R25 Regulation *Subject code:5ES1AF*

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

B.Tech I Semester Supplementary Examinations, June 2026

PROGRAMMING FOR PROBLEM SOLVING

(Common to EEE, CSE, CSE(AI&ML), CSE(DS)& IT)

Maximum Marks: 60 Date:18.06.2026 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 (5X2M=10Marks)	Marks	CO	BTL
1.a	Differentiate application and system software.	2M	1	L2
b	What are the purposes of break and continue statements?	2M	2	L1
c	Why addition of two pointers is impossible?	2M	3	L1
d	Distinguish between union and structure.	2M	4	L2
e	Define an Algorithm.	2M	5	L1

Part-B

	Answer All the following questions. (5X10M=50Marks)	Marks	CO	BTL
2	a) List and explain the various components of computer. b) Write the importance of precedence and associativity? Write the table for operator precedence.	5M 5M	1	L2 L2
	OR			
3	a) List the properties of an algorithm? Construct an algorithm for sum of digits in a given number. b) Elaborate implicit and explicit type conversions with examples.	5M 5M	1	L2 L2
4	a) Explain various repetitive statements with examples. b) Demonstrate various string manipulation functions available in C with examples.	5M 5M	2	L2 L2
	OR			
5	a) List and explain the differences between while and do-while loops with suitable examples. b) Build a C program to calculate the difference of two 2-dimensional matrices.	5M 5M	2	L2 L2
6	a) Explain the procedure of command line arguments with an examples. b) Elaborate various valid arithmetic operations that can be performed on pointers in C.	5M 5M	3	L2 L2

	OR			
7	a) Discuss the different parameter passing techniques in functions with examples. b) Demonstrate the use of actual and formal arguments in functions, and distinguish between the two.	5M 5M	3	L2 L2
8	a) What is mean by recursion? Explain the purpose of recursive function with an example. b) Demonstrate how to access the elements of a union with an example.	5M 5M	4	L2 L2
	OR			
9	a) How to access structure variables? Explain with example. b) Develop a program for finding the GCD among two numbers using recursion.	5M 5M	4	L2 L3
10	Describe binary search. Trace the steps to search 15 and 39 in the following elements 12, 15, 18, 20, 22, 36, 39, 40, 46 which is unsuccessful search using binary search.	10M	5	L3
	OR			
11	Write a C program that reads contents of a file and displays then in capital letters if they are alphabets.	10M	5	L2