R20 Regulation *Subject code:3E2AC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B. Tech II Semester Supplementary Examinations, June 2026

C PROGRAMMING FOR PROBLEM SOLVING

(Common to CE & EEE)

Maximum Marks: 70 Date: 24.06.2026 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 (10X2M=20 Marks)		Marks	CO	BTL
1	Define an algorithm? list out the characteristics of an algorithm?	2M	1	L1
2	Illustrate briefly about repetition loops?	2M	1	L1
3	Define an array? How do we calculate the size of an array?	2M	2	L1
4	What is recursive function?	2M	2	L1
5	Define pointer? Explain about pointer to pointer?	2M	3	L1
6	Explain the usage of realloc()?	2M	3	L1
7	Demonstrate the usage of 'typedef'	2M	4	L1
8	What are command-line arguments?	2M	4	L1
9	Distinguish between text files and binary files?	2M	5	L1
10	Explain fseek function.	2M	5	L1
	Part-B			
Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Illustrate briefly about different types of operators? List out the operators from higher priority to lower priority?	10M	1	L2
	OR			
12	Convert the following to hexadecimal, octal and binary? $(1228)_{10}$, $(1213)_2$, $(2124)_2$, $(2028)_{10}$,	10M	1	L2
13	Write a c program to perform matrix multiplication?	10M	2	L2
	OR			
14	Explain inter function communication with suitable example?	10M	2	L2
15	Explain briefly about dynamic memory allocation with suitable examples?	10M	3	L2
	OR			
16	What are the string manipulation functions? Explain their usage.	10M	3	L2

17	a) Explain self-referential structures with a sample program. b) Explain about bit fields.	5M 5M	4	L2
	OR			
18	Explain in detail about command line arguments and preprocessor commands with suitable examples.	10M	4	L2
19	What is meant by a binary file? Discuss about file positioning functions?	10M	5	L2
	OR			
20	Explain the file input and output functions with example program?	10M	5	L2