



R25 Regulation

Subject code:5ESIAC

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

B.Tech I Semester Regular Examinations, January 2026

C PROGRAMMING & DATA STRUCTURES
(Common to CE & ECE)

Maximum Marks: 60

Date:09.01.2026

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	Explain how expression are evaluated in C language with example.	2M	1	2
b	Write the difference between break and continue statements.	2M	2	2
c	Demonstrate the concept of pointers to pointers in C language.	2M	3	2
d	Discuss the difference between Text and Binary streams.	2M	4	1
e	Explain abstract data type and give an example.	2M	5	2

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	a) Explain computer systems in detail. Describe hardware and software components.	5M	1	1
	b) Explain basic phases in software development.	5M		1
OR				
3	a) Explain relational, and bitwise operators with examples.	5M	1	1
	b) Explain data types in C with suitable examples.	5M		1
4	a) Write a program to calculate the sum of the digits of a given number.	5M	2	3
	b) Write a program to demonstrate the switch statement.	5M		3
OR				
5	a) Discuss standard functions in C language with examples.	5M	2	2
	b) Write a program to add two 3x3 matrices.	5M		3
6	a) Describe dynamic memory allocation in C. Explain dynamic memory allocation functions with examples and use cases.	5M	3	2
	b) Describe how an array can be passed to a function using pointers.	5M		2
OR				
7	a) Explain any five string manipulation functions available in C with example.	5M	3	2

	b) Describe arrays of strings and their applications.	5M		2
8	a) What is typedef in C? Explain its advantages with examples. b) Explain structures in detail. Discuss structure declaration, initialization, accessing members, and operations with suitable programs.	5M 5M	4	2 2
	OR			
9	a) Describe standard library functions for file handling in C with examples. b) Write a program to copy contents from one file to another.	5M 5M	4	1 3
10	a) Apply Bubble sort technique to sort the following numbers in ascending order. 34, 54, 89, 67, 12, 39, 76, 42 b) Write a C program to search a number in an array using binary search.	5M 5M	5	3 3
	OR			
11	a) Demonstrate insert and delete operations on single linked list. b) Explain stack operations with example.	5M 5M	5	2 2