

R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT
(An Autonomous Institute U/s UGC Act 1956)

B.Tech. SEMESTER-I, SEMESTER END EXAMINATION – WINTER 2025

SUBJECT CODE: 2CS101

DATE: 24-12-2025

**SUBJECT NAME: FUNDAMENTAL OF COMPUTER
PROGRAMMING**

TIME: 11:00 AM to 01:30 PM

TOTAL MARKS: 70

Instructions

1. It is **compulsory** for students to write **Enrolment No. /Seat No.** on the question paper.
2. Write answers of **Section A** and **Section B** in **separate answer books**.
3. Attempt all questions from both **Section A** and **Section B**.
4. Each section carries **35 marks**, with a total of **70 marks** for the examination.
5. The figures to the right of each question indicate full marks, make suitable assumptions with justification.
6. BL - Cognitive Level (As per Revised Bloom's Taxonomy) (R-Remember, U-Understanding, A –Application, N –Analyze, E – Evaluate, C -Create), CO - Course Outcomes.

SECTION A

		Marks	BL	CO
Q.1	(a) Define Keyword. List out keywords supported in C.	03	R	1
	(b) Enlist the types of operators in C and explain any two types of operators with an example.	04	U	1
Q.2	(a) Explain the Scope, Visibility, and Lifetime of variables.	03	U	4
	(b) Write a C program to add two numbers using a user-defined function add().	04	A	4
	(c) Write a program to demonstrate call by reference in C.	07	A	4
OR				
Q.2	(a) Explain the three elements of the function with one example.	03	U	4
	(b) Write a program to swap two numbers using a function.	04	A	4
	(c) Write a program in C to calculate the power of any number using recursion.	07	A	4
Q.3	(a) Define a pointer. Write the syntax for declaring and initializing a pointer variable.	03	R	5
	(b) Explain the Array of Pointers with a suitable example	04	U	5
	(c) Write a C program to define a structure employee that contains a person's name, date of joining, and salary. Display the details of one employee.	07	A	5

OR

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|------------|-----|---|-----------|----------|----------|
| Q.3 | (a) | Define Structure. Write syntax to declare and initialize a structure variable. | 03 | R | 5 |
| | (b) | Explain the concept of pointer to pointer (chain of pointers) with an example. | 04 | U | 5 |
| | (c) | Write a program to demonstrate the use of a Union for storing student information like Roll no, Name, and Marks in C. | 07 | A | 5 |

SECTION B

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|------------|-----|--|--------------|-----------|-----------|
| Q.4 | (a) | Write a C program using a for loop to print even numbers from 2 to 20. | 03 | A | 2 |
| | (b) | Explain the purpose of the break and continue statements with syntax. | 04 | R | 2 |
| Q.5 | (a) | Define an array. How is a one-dimensional array declared in C? | 03 | R | 3 |
| | (b) | Discuss the advantages of using arrays in programming. | 04 | U | 3 |
| | (c) | Write a program to count vowels in a given string. | 07 | A | 3 |

OR

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| Q.5 | (a) | List and briefly describe the purpose of any three string handling functions in C. | 03 | R | 3 |
| | (b) | Explain the concept of a character array and how it differs from a string in C. | 04 | U | 3 |
| | (c) | Write a program to find the sum of elements in a two-dimensional array. | 07 | A | 3 |
| Q.6 | (a) | Differentiate between static and dynamic memory allocation. | 03 | U | 6 |
| | (b) | Explain with syntax and example how malloc() and free() work. | 04 | U | 6 |
| | (c) | Explain in detail file handling in C. Write a program to create a text file and count the number of vowels, consonants, and digits in it. | 07 | N | 6 |

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|------------|-----|--|-----------|----------|----------|
| Q.6 | (a) | Discuss the function used to open and close a file in C. | 03 | U | 6 |
| | (b) | What are the various modes of opening a file? Give examples. | 04 | U | 6 |
| | (c) | Write a C program that reads data from one file and writes it into another file. | 07 | N | 6 |
