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: 2IT101   **DATE: 24-12-2025**

SUBJECT NAME: FUNDAMENTALS 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)**	List and explain any two types of operators in C with suitable examples.	03	R	1
	(b)	What is programming language? Explain the difference between low-level, high-level, and middle-level programming languages with examples.	04	A	1
Q.2	**(a)**	Describe the conditional (?:) operator with an example.	03	U	2
	(b)	Write a C program to find that the accepted number is Negative, Positive, or zero.	04	A	2
	(c)	Explain the working of if, if...else, and nested if with examples.	07	R	2

OR

			Marks	BL	CO
Q.2	**(a)**	Explain the use of the break statement in a loop with an example.	03	U	2
	(b)	Write a C program to generate the following output using nested loops: A A A A A A A A A A A A A A A A A A A A A	04	A	2
	(c)	Explain the syntax and working of while, do...while, and for loops with examples.	07	R	2
Q.3	**(a)**	Explain the difference between one-dimensional array and two-dimensional array in C.	03	U	3
	(b)	Write a C program to find total character from a given string.	04	A	3

			Marks	BL	CO

(c) Explain the concept of strings in C. Write a program to find the reverse of a string using string handling functions.   07   R   3

OR

Q.3 (a) Explain the difference between a one-dimensional character array and a string in C.   03   U   3

(b) Write a C program to reverse the elements of a one-dimensional array of 5 integers.   04   A   3

(c) Define an array and explain the syntax for declaring and initializing a one-dimensional array with an example in C.   07   R   3

SECTION B

			Marks	BL	CO
Q.4	**(a)**	Differentiate between Linear Search and Binary Search.	03	U	6
	(b)	Write a short note on the Insertion Sort. Explain with the help of an example.	04	R	6
Q.5	**(a)**	What is a Pointer? Write an example to declare and initialize a pointer variable in C.	03	R	5
	(b)	Write a C program to print elements of an array using a pointer.	04	A	5
	(c)	Explain the opening and closing of a text file in C with example. Also describe various modes used in file opening.	07	U	5

OR

			Marks	BL	CO
Q.5	**(a)**	What is a pointer to a pointer? Give an example.	03	R	5
	(b)	Write a C program to swap two numbers using pointers.	04	A	5
	(c)	Explain the concept of dynamic memory allocation in C, with an example using *malloc*().	07	U	5
Q.6	**(a)**	What is the scope and visibility of variables declared inside and outside functions?	03	R	4
	(b)	Write a C program that defines a user-defined function to find the Fibonacci series up to a given number.	04	A	4
	(c)	Explain how structure variables are declared, initialized, and copied in C.	07	U	4

OR

			Marks	BL	CO
Q.6	**(a)**	State the differences between Structure and Union in C.	03	R	4
	(b)	Create a Structure named 'Book' with members title, author, and price. Write a C program to store and display the details of a book.	04	A	4
	(c)	What is recursion? Explain how it works, with an example of finding the factorial of a number.	07	U	4

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