

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

B.TECH SEMESTER - I, SEMESTER END EXAMINATION – SUMMER 2025

Subject Code: 1CS101**Date: 06-06-2025****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 - Bloom's Taxonomy Levels (R-Remember, U-Understanding, A –Application, N –Analyze, E – Evaluate, C -Create), CO - Course Outcomes.

SECTION A**Marks BL CO****Q.1 Multiple-Choice Questions****[05]****(a)** In C a pointer variable to an integer can be created by the decalaration**1 R 5****(i)** int p*;**(ii)** int *p;**(iii)** int +p;**(iv)** int \$p;**(b)** What is function?**1 U 4****(i)** Function is a block of statements that perform some specific task.**(ii)** Function is the fundamental modular unit.A function is usually designed to perform a specific task.**(iii)** Function is a block of code that performs a specific task. It has a name and it is reusable**(iv)** All the Above**(c)** A recursive function in C_____.**1 R 4****(i)** Call itself again and again**(ii)** Return multiple values**(iii)** Loop over a parameter**(iv)** None of these**(d)** What is the keyword used to define structure in C?**1 R 4****(i)** struct**(ii)** object

(iii) record

(iv) class

(e) What is the function of fputs()?

1 R 5

(i) read a line from a file

(ii) read a character from a file

(iii) write a character to a file

(iv) write a line to a file

Q.2 Attempt Any Two

[10]

(a) List and discuss any four file handling functions used in C.

5 R 5

(b) What is Pointer in C and how it initializes? State its advantages.

5 U 5

(c) Write a C program to copy content of one file to other with the help of file handling functions.

5 A 5

Q.3 Attempt Any Two

[10]

(a) List out all operators and explain any four in details

5 U 1

(b) Write an algorithm and draw the flowchart to finding odd and even number from given two numbers.

5 A 1

(c) List out and briefly explain basic building blocks of Computer system.

5 U 1

Q.4 Attempt Any Two

[10]

(a) What is structure? Explain with example how to declare a structure and how to initialize it.

5 U 4

(b) Explain the concept of recursion with an example.

5 U 4

(c) Define Structure. Compare structure and union.

5 N 4

SECTION B

		Marks	BL	CO
Q.5 Multiple-Choice Questions		[05]		
(a) What is the output of the following code? <pre>int i = 0; while (i < 3) { printf("%d", i); i++; }</pre>		1	N	2
(i) 012 (ii) 123 (iii) 321 (iv) 0 1 2				
(b) Which loop structure is best suited for printing all even numbers from 1 to 100?		1	A	2
(i) while loop (ii) do...while loop (iii) for loop (iv) goto				
(c) How are two-dimensional arrays stored in memory in C?		1	U	3
(i) Column-wise (ii) Row-wise (iii) Randomly (iv) Diagonally				
(d) You need to choose between a one-dimensional array and a two-dimensional array to store student marks for multiple subjects. Which would be more appropriate and why?		1	E	3
(i) One-dimensional array; simpler to code (ii) Two-dimensional array; better for representing tabular data (iii) One-dimensional array; uses less memory (iv) Two-dimensional array; supports strings				
(e) To reverse the characters in a string str, which of the following approaches would you choose?		1	C	3
(i) Print characters in reverse using a loop (ii) Use strrev() directly (iii) Use a loop to swap characters from both ends until the middle (iv) Convert to ASCII values, sort, and print				
Q.6 Attempt Any Two		[10]		
(a) Create a program in C that reads 5 integers into an array and prints them in reverse order.		5	C	3

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|--|---|---|---|
| (b) Enlist any five string handling functions available in C. Write the syntax for each and mention their purpose. | 5 | R | 3 |
| (c) How does the switch statement work in C? Write a small example to demonstrate its structure. | 5 | U | 2 |

Q.7 Attempt Any Two **[10]**

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|--|---|---|---|
| (a) Write a C program to input 5 integers in an array and display the square of each number. | 5 | A | 3 |
| (b) Differentiate between switch and if-else-if ladder with an example of each. | 5 | U | 2 |
| (c) Design a program in C to print a right-angled triangle pattern using nested loops. | 5 | C | 2 |

Example:

```
*
* *
* * *
* * * *
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Q.8 Attempt Any Two **[10]**

- | | | | |
|--|---|---|---|
| (a) Define a two-dimensional array. Write its syntax and give one example showing how it is used to store data. | 5 | R | 3 |
| (b) Write a C program to check whether a number entered by the user is positive, negative, or zero using if...else statements. | 5 | A | 2 |
| (c) Write a program in C to display the Fibonacci series up to n terms using a while loop. | 5 | C | 2 |
