

**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: 1CS101**

**DATE: 29-12-2025**

**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 - 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)** What will be the output of the following C code?

**1 A 1**

```
#include <stdio.h>
int main()
{
    int i = 0;
    int x = i++, y = ++i;
    printf("%d % d\n", x, y);
    return 0; }
```

**(i)** 0,2

**(ii)** 0,1

**(iii)** 1,2

**(iv)** Undefined

**(b)** Which operator is used for logical AND?

**1 R 1**

**(i)** &

**(ii)** &&

**(iii)** |

**(iv)** ||

- (c) What is the output? 1 A 5
- ```

void main()
{
    int a = 5;
    int *ptr ;
    ptr = &a;
    *ptr = *ptr * 3;
    printf("%d", a);
}

```
- (i) Some address (ii) 5
- (iii) 15 (iv) Error
- (d) A structure is a collection of: 1 R 4
- (i) Similar data types (ii) Dissimilar data types
- (iii) Functions only (iv) Arrays only
- (e) Which mode opens a file for reading only? 1 R 5
- (i) "r" (ii) "w"
- (iii) "a" (iv) "rw"

### Q.2 Attempt Any Two

[10]

- (a) Differentiate between flowchart and algorithm. Draw a flowchart to find the largest of three numbers. 5 A 1
- (b) List and explain any four operators used in C with examples. 5 R 1
- (c) Write a C program to read two numbers from the user and display their sum, difference, multiplication, and division using formatted input/output functions (printf() and scanf()). 5 A 1

### Q.3 Attempt Any Two

[10]

- (a) Explain various file opening modes (r, w, a, r+, w+) with examples. 5 U 5
- (b) Define a pointer in C and explain its declaration and initialization with suitable examples. 5 R 5
- (c) What is dynamic memory allocation? Explain usage of malloc() and calloc(). 5 U 5

**Q.4 Attempt Any Two****[10]**

- |                                                                                                                         |          |          |          |
|-------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|
| (a) Explain the process of declaring, initializing, and accessing structure members with a suitable syntax and example. | <b>5</b> | <b>U</b> | <b>4</b> |
| (b) Write a C program to Calculate Square of a Number using function.                                                   | <b>5</b> | <b>A</b> | <b>4</b> |
| (c) Define structure and union. List differences between them with proper examples.                                     | <b>5</b> | <b>A</b> | <b>4</b> |

**SECTION B****Marks BL CO****Q.5 Multiple-Choice Questions****[05]**

- |                                                                                 |          |          |          |
|---------------------------------------------------------------------------------|----------|----------|----------|
| (a) Which of the following is used to select one option among multiple choices? | <b>1</b> | <b>R</b> | <b>2</b> |
| (i) if statement                                                                |          |          |          |
| (ii) switch statement                                                           |          |          |          |
| (iii) goto statement                                                            |          |          |          |
| (iv) continue statement                                                         |          |          |          |
| (b) Which loop is guaranteed to execute at least once?                          | <b>1</b> | <b>R</b> | <b>2</b> |
| (i) for loop                                                                    |          |          |          |
| (ii) while loop                                                                 |          |          |          |
| (iii) do...while loop                                                           |          |          |          |
| (iv) nested loop                                                                |          |          |          |
| (c) Which statement is used to skip the current iteration of a loop?            | <b>1</b> | <b>R</b> | <b>2</b> |
| (i) break                                                                       |          |          |          |
| (ii) continue                                                                   |          |          |          |
| (iii) goto                                                                      |          |          |          |
| (iv) exit                                                                       |          |          |          |
| (d) What happens if the break statement is used inside a nested loop?           | <b>1</b> | <b>A</b> | <b>2</b> |
| (i) Terminates all loops                                                        |          |          |          |
| (ii) Terminates only the innermost loop                                         |          |          |          |
| (iii) Skips current iteration                                                   |          |          |          |
| (iv) Causes compilation error                                                   |          |          |          |
| (e) What will be printed?                                                       | <b>1</b> | <b>N</b> | <b>2</b> |

```

for(int i = 0; i < 5; i++)
{
    if(i == 2) continue;
    printf("%d", i);
}

```

(i) 01234

(ii) 0134

(iii) 234

(iv) Infinite loop

|                                                                                                                                                            |             |   |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---|---|
| <b>Q.6 Attempt Any Two</b>                                                                                                                                 | <b>[10]</b> |   |   |
| (a) Explain the working of switch statement with a suitable example.                                                                                       | 5           | U | 2 |
| (b) Compare Entry control and Exit control loops with syntax and examples.                                                                                 | 5           | U | 2 |
| (c) Write a program to calculate factorial of a number using for loop.                                                                                     | 5           | A | 2 |
| <b>Q.7 Attempt Any Two</b>                                                                                                                                 | <b>[10]</b> |   |   |
| (a) Explain the difference between one-dimensional and two-dimensional arrays with suitable examples.                                                      | 5           | U | 3 |
| (b) Explain how different string handling functions in C (such as strlen, strcpy, strcmp, strcat) work, and illustrate their usage with suitable examples. | 5           | U | 3 |
| (c) Describe the difference between static arrays and dynamic arrays.                                                                                      | 5           | U | 3 |
| <b>Q.8 Attempt Any Two</b>                                                                                                                                 | <b>[10]</b> |   |   |
| (a) Write a program to reverse a string without using library functions.                                                                                   | 5           | A | 3 |
| (b) Write a program to find the sum of elements in a one-dimensional array.                                                                                | 5           | A | 3 |
| (c) Write a program to input and display elements of a 2D array.                                                                                           | 5           | A | 3 |

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