

**FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2023**

**(Regular/Improvement/Supplementary)**

**COMPUTER SCIENCE & MATHEMATICS (DOUBLE MAIN)**

**GDCS1B01T: COMPUTER FUNDAMENTALS & PROGRAMMING USING C**

**Time: 2 Hours**

**Maximum Marks: 60**

**SECTION A: Answer the following questions. Each carries *two* marks.**

**(Ceiling 20 Marks)**

1. State and prove the De Morgan's law.
2. Differentiate between RS Flipflop and D Flipflop.
3. What is an XNOR gate? Obtain its truth table.
4. What are BCD Codes? Give examples?
5. What is an algorithm? What are the important characteristics of an algorithm?
6. What do you mean by reserved keywords? Give example?
7. What is a *sizeof* Operator?
8. How a two dimensional array declared?
9. Explain the use of strcpy() and strcmp() functions.
10. How can we declare and initialize a pointer?
11. Explain any four string handling functions.
12. Compare call by value and call by reference?

**SECTION B: Answer the following questions. Each carries *five* marks.**

**(Ceiling 30 Marks)**

13. Write the laws of Boolean algebra.
14. Explain the structure of C program.
15. What is *If* Construct? Explain the different forms of *If* construct with example.
16. What is meant by scope and life time of variables? Explain various scopes levels in C.
17. Write a C program to find the largest and smallest number from an array.
18. Compare structure and union in C.
19. What is recursion? Explain with example.

**SECTION C: Answer any *one* question. Each carries *ten* marks.**

20. Explain the difference between entry controlled and exit controlled loop in C. Give suitable examples for each one.
21. What are user defined functions? Explain different categories of user defined functions.

**(1 x 10 = 10 Marks)**