DECEMBER 2024 **U/ID 46501/UCC1A**

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. What are the characteristics of computer?
2. What is operating system?
3. What are Logic gates?
4. What is Truth Table?
5. Define : Binary Codes.
6. What are complementary system?
7. What is K-map?
8. Define : MC-Clausky Tabulation method.
9. What is Ripple Counter?
10. Define : Flipflop.
11. What is Encoder?
12. Define : Multiplexer.

PART B — (5 × 5 = 25 marks)

Answer any FIVE questions.

13. Explain briefly about complement numbers with examples.

14. Explain the NOR gate as universal gate.

15. Discuss about the Design of ALU.

16. Briefly explain the T Flip flop with examples.

17. Briefly explain the Half Adder with suitable diagram.

18. Discuss the Basic Theorems of Boolean Algebra.

19. Explain about ROM.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

20. Briefly explain the various Logic gates with examples.

21. Reduce the following equation $f = \Sigma_m(0,2,3,5,8,10,11,13)$ using Mc-Clausky method.

22. Briefly explain RS flip flop circuit with Truth Table.

23. Explain four bit Input shift Register with diagram.

24. Describe the design of Arithmetic and logic unit and their functions.

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