MAY 2025 **U/ID 46501/UCC1A**

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. What is Gray Code?
2. What are the examples of Operating System?
3. What is ASCII?
4. Define: Number System.
5. Define : Compliments.
6. What is Boolean function?
7. What is Binary Parallel Adder?
8. What is Map method?
9. What is Sequential logic?
10. What is ROM?
11. What is Encoder?
12. Define: PLA.

PART B — (5 × 5 = 25 marks)

Answer any FIVE questions.

13. Convert the following Binary codes to Gray Codes.

$(101101)_2 = (\quad\quad)_G$

14. Simplify using K-map

$F = (A, B, C, D) = \Sigma(1, 3, 8, 9, 10, 11)$

15. Explain the basic theorems of Boolean algebra.

16. Discuss about decoders. Explain briefly.

17. Explain full adder using NAND gate.

18. Briefly explain multiplexer.

19. Write a note on shift register with examples.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

20. Explain the use of Binary logic in detail with examples.

21. Convert the logic function of three variable.

$F(A, B, C) = A + BC$ to standard POS expression.

22. Explain the master slave Flip Flop with a neat circuit.

23. Explain the design circuit of multiplexer with examples.

24. Explain the design circuit of subtractor with a neat diagram.

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