DECEMBER 2023 **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 Binary Logic?
3. What is 10's complement?
4. Write down the steps for Mc-Clausky tabulation Method.
5. Draw the symbols of AND Logic gate.
6. State DeMorgan's Theorem.
7. What is EBCDIC?
8. What is RS FLiP FLoP?
9. What is shift Register?
10. What is PLA?
11. What is DeMultiplexer?
12. What is Ribble Counter?

PART B — ($5 \times 5 = 25$ marks)

Answer any FIVE questions.

13. Explain briefly complement numbers with examples.

14. Simplify the following Boolean functions using K-Map method.

$$F = A'C + A'B + AB'C + BC$$

15. Explain the Design of ALU.

16. Explain Decoders.

17. Describe the shift Registers.

18. Design a RS Flip Flop with Logic Circuit.

19. Explain about 1*16 Bit Multiplexer with Truth Table.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

20. Explain briefly various Logic gates with Truth Table.

21. Minimize four variables Boolean equations using K-Map method.

$$F = WXY'Z' + WXY'Z + WXYZ' + WXYZ$$

22. Briefly explain JK Flip Flops with circuit and Truth Table.

23. Construct a Three Bit Full subtractors using Logic gates.

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

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