MAY 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 examples of Computer Languages?
2. What is Number system?
3. What are Logic gates?
4. What is K–map?
5. What is commutative law?
6. What is Flip Flop?
7. Draw the symbol for NAND Gate.
8. What is counter?
9. What is multiplexer?
10. Define – Accumulator.
11. What is Decoder?
12. What is ROM?

PART B — ($5 \times 5 = 25$ marks)

Answer any FIVE questions.

13. Convert the following:

(a) $(10001101)_2 = (\ ?\ )_{10}$

(b) $(574)_8 = (\ ?\ )_{10}$

14. Explain SOP method with examples.

15. Explain the Boolean Algebra postulates and prove them.

16. Explain the Block diagram of Half Adder Cricuit.

17. Explain about synchronous counters with neat diagrams.

18. Explain about encoder.

19. Explain in detail about NAND, NOR and EX–OR gates.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

20. Explain the use of Binary Logic in detail.

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

22. Discuss on NAND Implementation for $F(x, y, z) = \sum(0,6)$.

23. Discuss the design of circuit using PLA with four Inputs and four outputs.

24. Briefly explain about the design of Status Register.
