MAY 2024

P/ID 17602/PCA1B/ PCATB

Time : Three hours Maximum : 80 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. Write the names of various number systems.

2. What is the decimal equivalent of binary 1011.11?

3. Write the Associative and distributive laws of Boolean Algebra.

4. Mention the purpose of code converter.

5. What is Magnitude comparator?

6. Write down the various ROM types.

7. Define Flip Flop.

8. Differentiate between Ripple and synchronous counter.

9. What is Scratch pad memory?

10. Write down the functions of Status register.

11. What is Accumulator?

12. What do you mean by Hardwired control?

PART B — ($5 \times 6 = 30$ marks)

Answer any FIVE questions.

13. Explain the use of complements in Number system.

14. State and explain the various laws of Boolean Algebra.

15. Design an Half adder circuit and explain it with truth table.

16. Outline the features of Decoder circuit.

17. Write short notes on state reduction and excitation tables.

18. Explain about Bus organization in memory unit.

19. Illustrate the steps in execution of an Instruction.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

20. Simplify the following Boolean expression using K-map. $F = A'C + A'B + AB'C + BC$.

21. Explain the working of Multiplexer with its circuit diagram.

22. Explain JK Master Slave flip flop with neat sketch.

23. Brief on the design of ALU.

24. Discuss about Instruction and Data formats.

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