

APRIL 2021

51301/SAU1A

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. Convert the number $(1011.011)_2$ into decimal number.
2. Define operating system.
3. Convert the hexadecimal (2D.C) into its decimal equivalent.
4. Define Binary logic.
5. What is mean by truth table.
6. What is a Karnaugh map.
7. What is Flipflop? Draw the logic diagram of RS Flip Flop.
8. What are the uses of a counter?
9. What is Encoder?

10. Define ROM.
11. What is meant by universal logic gate.
12. What is PLA?

SECTION B — ($5 \times 5 = 25$ marks)

Answer any FIVE questions.

13. Explain the characteristics of computers.
14. Write short notes on sum of products with suitable examples.
15. Draw a four line to one line multiplexer and explain its operation with a truth table.
16. Explain the design of decoders with diagram.
17. Explain the principles of Ripple counter.
18. Design D Flip flop with logic circuit.
19. Explain the working principles of a shift register.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

20. Prove that NAND is a UNIVERSAL GATE.
21. Explain (a) Excess 3 code (b) Gray code

22. Use a karnaugh map to find a minimal sum of the products $F(A,B,C,D) = \Sigma(1,3,7,11,15) + d(0,3,5)$
 23. Briefly explain about RS Flip Flop with neat diagram.
 24. Design a Half subtractor and full subtractor.
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