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**I Semester B.Voc. Degree Examination, August - 2021****INFORMATION TECHNOLOGY****Digital Electronics****(CBCS Scheme)****Paper : BOIT1 - A022****Time : 3 Hours****Maximum Marks : 70****Instructions to Candidates:**Answer **All** the Parts.**PART - A****I. Answer any Ten questions. Each question carries 2 marks. (10×2=20)**

1. Name the four different types of number system. (2)
2. Mention any two combinational logic circuits. (2)
3. Write an expression and logic symbol of XOR gate. (2)
4. Draw the block diagram of Half Adder and write the sum and carry expression. (2)
5. Define sequential circuits. (2)
6. What is flip - flop? (2)
7. What is Register? (2)
8. Define Master - slave flip - flop. (2)
9. What is counter? (2)
10. Differentiate SRAM and DRAM. (2)
11. Give any two Boolean Laws. (2)
12. Convert Binary to gray code 1101. (2)

**PART - B****II. Answer any Five questions. Each question carries 10 marks. (5×10=50)**

13. a) Convert the following number
  - a.  $(1011)_2 = (?)_8$  (2)
  - b.  $(BAF2)_{16} = ( )_2$  (3)
- b) Explain different types of digital codes. (5)

**[P.T.O.]**



(2)

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14. a) State and prove Demorgan's laws using truth table. (5)  
b) Solve the following using k-map.  
$$F(A, B, C, D) = \sum m(0, 1, 4, 5, 7, 15, 2, 10)$$
 (5)
15. a) Explain full adder with neat diagram. (5)  
b) Explain 4 bit parallel Adder. (5)
16. a) What is RS flip - flop? Explain with a neat diagram. (5)  
b) Explain JK flip - flop with a neat timing diagram. (5)
17. a) Explain SISO and SIPO shift register. (5)  
b) Explain Ripple counter with neat diagram. (5)
18. a) Explain Half subtractor with a neat diagram. (5)  
b) Write steps to perform 2's complement subtraction with example. (5)
19. a) Describe the Error detection and correction code with example. (5)  
b) Explain NAND and NOR gates with a neat diagram. (5)
20. Write a short notes on (5)  
1) Flash memory. (2)  
2) Maxterm and Minterm. (2)  
3) PIPO Register (3)  
4) T flip - flop. (3)

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