25122

Reg. No. | | | | | | | | |

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.

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 perfrom 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

1) Flash memory. **(2)**

2) Maxterm and Minterm. **(2)**

3) PIPO Register **(3)**

4) T flip - flop. **(3)**