EY-310

B.Tech. III[rd] Semester (New Scheme)

I.T. Examination, 2023-24

Digital Electronics

Paper - IT - 303

Time : 3 Hours] **[Maximum Marks : 60**

Note : - Attempt all questions. Each question carry equal marks.

Unit-I

1. (a) Explain Binary codes.

   (b) What are ASCII and EDCDIC codes? Explain with example.

OR

2. Do as directed :

   (i) $(83)_{10} = (?)_2$

   (ii) $(4EF)_{16} = (?)_{10}$

   (iii) $(1102)_2 / (101)_2$

   (iv) $(4E2D)_{16} = (?)_8$

Unit-II

3. Define Minterm, Maxterm. Simplify using tabulation method

$$F(V, W, X, Y, Z) = \sum m(0, 4, 12, 16, 19, 24, 27, 29, 31)$$

OR

4. POS and SOP form. Obtain simplified expression $F(w, x, y, z) = \sum(2, 3, 12, 13, 14, 15)$ in SOP.

Unit-III

5. Draw and explain full adder with the help of 2 Half adders? Disuss advantages of Half adder.

OR

6. Explain the operation J-K Filp-flop? Also explain Master-slave JK Filp-flop.

Unit-IV

7. Discuss various types of shift registers. Draw and explain SIPO shift register with the help of example.

OR

8. Explain and Draw the logic diagram of ripple counter and explain its working with the help of waveforms.

Unit-V

9. Define Finite State Machine. Explain synchronous sequential machine with its characterising equation.

OR

10. Describe Moore machine. Also Compare Mealy and Moore machine.

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