

Exam.Code:0921
Sub. Code: 33523

2125
B. E. (Information Technology)
Third Semester
ESC-301: Digital Electronics

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

1. Attempt the following:-

- a) Convert to hexadecimal and then to binary: 111.33_{10} .
- b) Using Hamming code with even parity construct the code word for the 7-bit data
1 0 1 1 0 1 0.
- c) Design a CMOS NAND gate.
- d) Convert D flip flop into T flip flop.
- e) What is a Johnson counter? Draw its circuit. (5x2)

UNIT - I

2. Simplify using K-Map: $\sum m (0,2,3,5,8,11,13,20,25,26,30) + \sum d (6,7,9,24)$.
{Note: The final solution should be written from the K-Map. Do not reduce it further}. (10)
3. Design a two bit magnitude comparator to compare equality. (10)
4. Design a synchronous 3-bit counter using J-K flip-flop to count the following states
0,2,3,5,6,7..... (10)

UNIT - II

5. Explain working of Dual slope ADC. (10)
6. Give comparison of TTL, ECL and CMOS digital logic families. (10)
7. Differentiate between static and dynamic memory. (10)

x-x-x