01668

B.TECH. - ELECTRICAL ENGINEERING

Term-End Examination

June, 2013

BIEE-017 : DIGITAL ELECTRONICS

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt **any seven** questions as the following. Assume the missing data if any.*

1. Derive the Boolean expression for a two-input Ex-OR gate to realize with two input NAND gates without using complemented variables and draw the circuit. **10**

2. Express the Boolean function $F = AB + \overline{A}C$ in a product of maxterm form. **10**

3. Reduce the expression $f = \sum m\,(0, 2, 3, 4, 5, 6)$ using k-map and implement it in NAND logic. **10**

4. What is full subtractor ? Design a full - subtractor and discuss with an example. **10**

5. Using a 4×1 MUX implement the logic function $F(A, B, C) = \sum m(1, 2, 4, 7)$. 10

6. What are the sequential circuits and how they are different from combinational circuits ? 10

7. What is a master - slave flip-flop and why they are called pulse - triggered flip-flops ? 10

8. Explain the internal Architecture of 8085 with the help of neat diagram. 10

9. Discuss the Bus-Architecture of 8086 and explain how 20 bit Address bus is used to address different memory segments. 10

10. Write the short notes on ***any two*** of the following : 5x2=10

    (a) PLA

    (b) Decoder

    (c) Shift Registers