

# BMS College of Engineering, Bangalore-560019

Instrumentation Technology Department

## TEST – I

Subject	Sub Code	Sem	Date	Time	Marks
Digital Electronics	ES3GCDEC	III	20/10/2010	75 min	40
Student Name					
USN					

**Answer any four**

Q. No	Question	Marks
1	Explain (with examples) EX-NOR truth table, K-map, Equation, gate structure and NAND gate representation Minterm and Maxterm canonical formula F1 Implies F2 Subsumes	10
2 a	Write standard maxterm canonical formula for $f(x, y, z) = \sum m\{1, 2, 3, 5\}$ and simplify using K – map method(SOP).	5
b	Write standard minterm canonical formula for $f(w, x, y, z) = \pi M(2, 4, 8, 9, 11) \cdot d(1, 3, 5, 7, 10, 13, 14, 15)$ and simplify using K – map method(POS).	5
3	Determine the minimal SOP of following expression using Tabular Method (Quine - McCluskey) $f(w, x, y, z) = \pi M\{0, 4, 5, 9\} \cdot d\{1, 7, 13\}$	10
4	Explain Full subtractor and give the block representation of full adder using two half adders.	10
5	Simplify $y = a'b + ab'(b+c')$ and represent the gate structure using Basic gates NAND only NOR only	10