R7

II B.Tech.I Semester(R07) Supplementary Examinations, May/June 2010
DIGITAL LOGIC DESING
(Common to Computer Science & Engineering, Information Technology and Computer
Science & System Engineering)

Time: 3 hours   **Max Marks: 80**

Answer any FIVE questions
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1. (a) Perform the subtraction with the following unsigned binary numbers by taking the 2's complement of the subtrahend
   i)100 - 110000 ii)11010 - 1101

   (b) Construct a table for 4 -3 -2 -1 weighted code and write 9154 using this code

   (c) Peerform arithmetic operation indicated below.Follow signed bit notation
   i)001110 + 110010 ii) 101011 - 100110

   (d) Explain the importance of gray code.

2. (a) Simplify to a sum of 3 terms:
   i)A'C'D' +AC' +BCD + A'CD' + A'BC + AB'C'

   (b) Given AB' + A'B = C, Show that AC' + A'C = B

   (c) Factor to obtain a Product of Sums(simplify where possible) A'C'D' +ABD' + A'CD +B'D

3. (a) Implement Half adder using 4 NAND gates.

   (b) Implement full subtrctor using NAND gates only.

4. Design a Excess-3 to BCD code converter using minimum number of NAND gates

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6. Explain about Ripple Counters in detail?

7. Explain about PAL in Detail?

8. Explain about Circuits with latches in detail?

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