Question for MOCK Test:

1. What are universal gates?why they are called so?Realize basic gates using universal gates. Also construct NAND gates using NOR gates and NOR gates using NAND gates. 10

2. Design a combinational circuit using PLD device as PLA(4*8*4) that is used to implement full adder function in which sum is represented as s_i and carry as c_i. 10

3. Implement the following function function with appropriate MUX. 10
   I. $F(A,B,C) = \sum(1,4,5,6)$
   II. $F(A,B,C,D) = \sum(0,1,3,8,9,15)$

4. Design a combinational circuit that convert binary number to excess 3 code to 8,4,-2,-1 code. 10

5. Define counter. Design a BCD counter that counts the binary number from 0000 to 1001 and returns to 0000 to repeat the sequence using T flipflop. 10

6. Draw arithmetic circuit Logic diagram with function table that perform 8 different major function, What is shift register? Draw the block diagram for shifting the content of register A to register B. Describe the operation.

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