

Roll No. ....

**22148**

**M.E. (ECE) 2nd Semester  
Examination- January, 2013**

**Electronics System Design**

**Paper MEEC-502**

**Time : 3 hours**

**Max. Marks : 100**

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Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

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**Note :** Attempt any **five** questions. All questions carry equal marks.

1. (a) Convert  $(ABC.DE)_{16}$  into decimal, binary and octal. 6
  
- (b) Find out the Gray code for 111001 4
  
- (c) Implement the following functions using single  $8 \times 1$  MUX.

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(1)

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(i)  $F_1(ABCD) = \sum(2,4,5,7,11,13,14)$

(ii)  $F_2(ABCD) = \sum(1,5,9,11,14)$

2. (a) Design a Excess-3 to BCD code converter using ROM. 10

(b) Design a Full adder using PLA and PAL. 10

3. Differentiate between : 20

(a) CPLD and FPGA

(b) Mealy Machine and a Moore Machine

(c) Synchronous and Asynchronous Counters

4. (a) Explain clock skew in brief. 10

(b) Explain with example the hazards in circuits developed by MEV methods. 10

5. (a) Explain tri-state bus system and propagation delay. 10
- (b) Define the terms Fan-in, Fan-out and Standard Load. 10
6. (a) Discuss in brief the timing and frequency consideration of the Controller. 10
- (b) What is a wired logic ? Explain with example. 6
- (c) Design a full subtractor using NAND gates. 4
7. (a) Explain the functional position and detailed flow diagram development. 10
- (b) Design a Asynchronous modulo-10 up-down counter. 10

8. Write short notes on any **two** :

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- (a) State of Machine
  - (b) The Excitation Ma
  - (c) Cycles and Races.
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