22148

M.E. 2nd Semester (E.C.E.) Examination, May–2015

ELECTRONICS SYSTEM DESIGN

Paper–MEEC-502

Time allowed : 3 hours]   *[Maximum marks : 100*

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

1. (a) Design a BCD to Seven Segment Converter.   10

   (b) Implement Full-subtractor using 8:1 MUX.   10

2. (a) Design a 4-bit look ahead adder.   10

   (b) Given $F = \Sigma m(2,4,5,6)$ implement $F(L)$ and $F(H)$ with an A-O-I devices.   10

3. (a) Draw and fully label the general model of a sequential finite state machine.   10

   (b) Why we need shift registers in digital design ? Explain the various operation modes of shift register.   10

4. (a) What do you mean by multi input system controller design ? Explain in detail MDS diagram.   10

   (b) What is PLA ? Draw and explain its structure. Discuss the PLA based design in detail.   10

5. (a) Explain Hazards with examples.   10

   (b) What are essential Hazards ? How these Hazards effect the operation of Asynchronous machine ? Discuss.   10

6. Explain the various MEV approaches to asynchronous circuits in detail.   10

7. (a) Explain wired logic in detail.   10

   (b) Using steps and rules for design of asynchronous machines, design a Basic Binary Cell.   10

8. (a) Write a detailed note on electromagnetic interference and electromagnetic compatibility grounding and shielding in digital circuits.   10

   (b) What are the timing and frequency considerations for designing system controller ?   10