M 27059

Reg. No. : .....

Name : .....

IV Semester B.Tech. Degree (Reg./Sup./Imp. – Including – Part Time) Examination, May 2015
(2007 Admn. Onwards)
PT2K6/2K6 EC 406 : DIGITAL ELECTRONICS

Time : 3 Hours Max. Marks : 100

1. Convert $(3287.5100098)_{10}$ to octal.
2. Define a demultiplexer. Explain how to convert a decoder into a demultiplexer.
3. Give the truth-table for each flip-flop type :
   a) RS
   b) D
   c) T
4. What is a ripple counter ?
5. Compare Mealy and Moore machines.
6. What are the two models of sequential circuits ? Explain.
7. Explain the characteristics of IIL logic family.
8. Mention the advantages of CMOS gate. **(8×5=40)**
9. a) Implement the following Boolean function using 8 : 1 MUX

   $F(A, B, C, D) = \sum m(0, 2, 6, 10, 11, 12, 13) + d(3, 8, 14)$. **15**

   OR

   b) What are the various type of ROM's ? Discuss their relative advantages and disadvantages. **15**

P.T.O.

10. a) Design MOD 5 synchronous counter using JK flip flops and implement it. **15**

OR

b) Explain the classification of shift registers. **15**

11. a) Explain counter design with state equation and state diagrams. **15**

OR

b) Design a synchronous decade counter to count in the following sequence : 1, 0, 2, 3, 4, 8, 7, 6, 5. **15**

12. a) Draw the circuit of TTL NAND gate and explain its operation. Compare the TTL and ECL logic families. **15**

OR

b) Discuss the characteristics of RTL families. **15**