

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Electronics Engg.) (2012 Onwards)
B.Tech.(ECE)/(Electronics & Computer Engg.)/(ETE) (2011 Onwards)
(Sem.-3)

DIGITAL CIRCUITS AND LOGIC DESIGN

Subject Code : BTEC-302

Paper ID : [A1131]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**Q1. Answer briefly :**

- a. Convert binary number 100001111 into equivalent gray number.
- b. Write excitation tables of SR and JK flip flops.
- c. Compare CMOs with ECL.
- d. What are excess 3 codes? Where are they used?
- e. Show that XOR gate acts as 1 bit comparator.
- f. What is open collector logic?
- g. What are De-Morgan theorems?
- h. Compare PLA and PAL.
- i. What are shift registers? What are their applications?
- j. Determine conversion time of ADC for 8-bit resolution at 2 MHz.

SECTION-B

- Q2. Implement the function $f(A, B, C, D, E) = \sum m(0,3,5,8,9,15,18,31)$ using QM Method.
- Q3. Explain the working of weighted resistor A/D converter.
- Q4. Design 4 bit Binary to Gray converter.
- Q5. Convert D flip flop into JK flip flop.
- Q6. Write note on accuracy and resolution of ADC.

SECTION-C

- Q7. Design a Mod 6 up down counter.
- Q8. Explain the following :
- a. Counter type ADC
 - b. Memory organization
- Q9. Design a BCD to seven segment decoder.