Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 18

B.Tech.(CSE)/(IT) (2011 Onwards) (Sem.–3)

DIGITAL CIRCUITS & LOGIC DESIGN

Subject Code : BTCS-303

M.Code : 56593

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

Answer briefly :

1. Multiply 1011.01 with 110.1.
2. Discuss the principle of duality.
3. Distinguish between combinational and sequential logic circuits.
4. Define R-2R ladder DAC.
5. What is the purpose of state diagram?
6. Discuss race around condition in JK flip flop.
7. Draw logic diagram of 3-line to 8-line decoder.
8. Explain level triggering.
9. What is serial-out shift register?
10. Write short note on Programmable Logic Arrays.

SECTION-B

11. Explain the working of Gray code? Write its importance and uses.

12. Solve the following Boolean functions by using K-Map.

    $F = (w,x,y,z) = \Sigma (0,1,4,5,6,8,9,10,12,13,14)$

13. With a neat block diagram explain the function of encoder. Explain parity checker.

14. Discuss the advantages and disadvantages of TTL Logic Family.

15. How does a Dynamic RAM cell works? Write its applications.

SECTION-C

16. a) What are Mealy and Moore models of sequential circuits?

    b) Give the introduction of Quine-McCluskey method of minimization.

17. Explain the types of counter. Write the steps to design a Synchronous Counter using JK flip flops.

18. What are the types of analog to digital converter techniques? Explain any one in detail.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.