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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(EE) (Sem.-4)
DIGITAL ELECTRONICS
Subject Code : EC-204
M.Code : 57011

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS 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**1. Answer briefly :**

- a. Give the decimal representation of binary numbers : (a)1011010 (b)1001.1100
- b. Convert the gray code 11001011 into binary code.
- c. Why NAND and NOR gates are called as universal gates.
- d. Draw truth table for half adder and half subtractor.
- e. Differentiate between signed and unsigned numbers.
- f. Write the application of De Morgan's law in Boolean algebra.
- g. Differentiate between RAM and ROM.
- h. What do you mean by terms "fan in" and "fan out"?
- i. What do you mean by accuracy and resolution of A/D converter?
- j. What are the different types of shift registers?

SECTION-B

2. What is a multiplexer? Explain the design of 8:1 multiplexer.
3. Reduce the function $f = \Sigma m(2, 3, 6, 7, 8, 10, 11, 13, 14)$ using K-Map.
4. Explain the working of successive approximation A/D converter.
5. Differentiate the following :
 - a. Min terms and Max terms.
 - b. Sum of product and Product of sum.
6. Design a MOD-8 asynchronous counter.

SECTION-C

7. Design a MOD-5 counter using JK Flip-flops.
8. Design the 4:16 Encoder with the help of truth table.
9. Write a short note on the following :
 - a. ECL and DTL logic families.
 - b. Shift Registers.

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.