

Roll No.

Total No. of Pages : 02

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B.Tech.(CSE) (Sem-3)
DIGITAL CIRCUITS & LOGIC DESIGN

Subject Code : BTCS-303

M.Code : 56593

Date of Examination: 29-05-2023

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

1. **Write Briefly :**

- a) Convert $(10-110111)_2$ to octal number.
- b) What is 1's complement? Explain with example.
- c) What is the Canonical form of the Boolean Expression?
- d) Explain the NOR Gate. Specify its symbol.
- e) Compare between TTL and CMOS logic families.
- f) Differentiate between Multiplexer and Demultiplexer.
- g) Explain level triggering.
- h) Explain in brief about Shift Registers.
- i) What is EEPROM?
- j) What do you mean by Analog Signals? Explain .

SECTION-B

2. **Write a detailed note on following codes :**
 - a) Weighted BCD
 - b) Excess 3 code.
3. **Explain the following in brief :**
 - a) Sum of Products (SOP)
 - b) Products of Sums (POS).
4. **Write a short note on following :**
 - a) DTL
 - b) MOS.
5. Write a detailed note on Karnaugh Maps.
6. Explain the working of Counter type A/D converter. Also, write its advantages and disadvantages.

SECTION-C

7. **Explain the working of following Flip flops in detail :**
 - a) Synchronous Counters
 - b) Ring Counters
8. **Write a detailed note on following:**
 - a) Multiplexer
 - b) Encoder
9. Explain different types of RAM along with their advantages and disadvantages.

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.