

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CSE) (Sem-3)

DIGITAL CIRCUITS & LOGIC DESIGN

Subject Code : BTCS-303

M.Code : 56593

Date o 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.