

Roll No.

3032

**B. Tech. 3rd Semester (CSE)
Examination – March, 2021**

DIGITAL ELECTRONIC

Paper : PCC-CSE-205-G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt five questions in all, selecting one question from each Section. Question No. 1 is compulsory. All questions carry equal marks.

1. (a) What do you mean by memory ?
- (b) Define Magnitude Comparator.
- (c) Explain Multiplexer.
- (d) Differentiate between Latch and Flip-Flop.
- (e) What is race-around condition ? $5 \times 3 = 15$

SECTION - A

2. (a) Design EX-OR and EX-NOR using NAND gate only. 7.5
(b) Realize $Y = \overline{A+B+C+D}$ using 2 input NOR gate only. 7.5
3. How do you convert a decimal number to an equivalent number in any other base system ? Discuss. 15

SECTION - B

4. Solve the given expression using Quine-Mecluskey Method : 15
 $Y(A, B, C, D) = \sum m(0, 1, 2, 3, 5, 7, 8, 10, 12, 13, 15)$
5. (a) Implement full adder circuit using 3 : 8 decoder. 7.5
(b) Design a binary to Gray Code Converter: 7.5

SECTION - C

6. (a) Design mod-5 down synchronous counter using JK flip-flop. 7.5
(b) Convert JK flip-flop to SR flip-flop. 7.5
7. Explain Bidirectional shift register in detail. 15

3032-2650-(P-3)(Q-9)(21) (2)

SECTION - D

8. What is the process of converting analog signal to digital signal ? Discuss any *one* method and enlist the applications of A/D converters. 15
9. Write short note on : $2 \times 7.5 = 15$
(a) PAL and PLA
(b) CPLDS and FPGA

3032-2650-(P-3)(Q-9)(21) (3)