

(Please write your Enrolment No. immediately)

Enrolment No.

MID TERM EXAMINATION

B.TECH PROGRAMMES (UNDER THE AEGIS OF USICT)

3RD Semester, November 2022

Paper Code: ECC-207

Subject: Digital Logic and Computer Design

Max Marks: 30

Time: 1.5 hrs.

Note: Attempt Q. No. 1 which is compulsory and any two more questions from remaining.

Question 1

- How is BCD Code different from Binary Code? (2 Marks) CO1
- Explain addition of two negative numbers in 2's complement form with help of an example. (2 Marks) CO1
- Implement two input EX-OR gate using a Multiplexer? (2 Marks) CO1
- Explain the concept of Level Triggering in Sequential Circuits? (2 Marks) CO2
- How is state diagram different from state table? (2 Marks) CO 2

Question 2

- Differentiate between Serial Adder and Binary Parallel Adder? (3 Marks), CO 1,2
- Explain how to Convert SR Flip Flop into D Flip Flop. (3 Marks), CO 2
- Design a 4 bit Ripple Down Counter and draw the waveform? (4 Marks), CO 2

Question 3

- For the Boolean expression $F = \bar{A}\bar{B}\bar{C} + \bar{A}B\bar{C} + A\bar{B}\bar{C} + ABC + ABC\bar{C}$ find out the minimized Product of Sum (POS) expression (use K-map). (5 Marks), CO1
- What is a Multiplexer? Design a 16:1 multiplexer using 4:1 multiplexers? (5 Marks), CO1

Question 4

- Using K-map simplify expression, $Y = f(A,B,C,D) = \pi(0,1,2,4,5,8,9,15)$ (2 Marks), CO 1
- A combinational circuit is defined by function $F_1 = \sum_m(1, 5, 7)$, $F_2 = \sum_m(5, 6, 7)$. Implement the circuit with a PLA. (3 Marks), CO 2
- Design a Mod-5 asynchronous counter using T-FF. (5 Marks), CO 2

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