TRIBHUVAN UNIVERSITY

2023

Bachelors in Computer Applications

Course Title: Digital Logics **Full marks: 60**

Course Code No: CAEN 103 **Pass Marks: 24**

Semester: I

Candidates are required to answer the questions in their own words as far as possible.

Group B

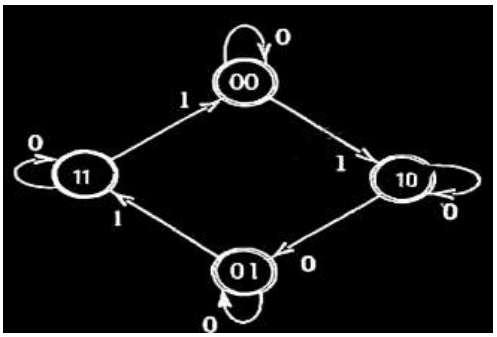
Attempt Any SIX Question. (6*5)=10

1. Convert +64.35 into IEEE 754 double precision floating point binary number.
2. Explain the universal gates with their logic symbol, logic expression, and truth table. Realize an OR Gate using NAND Gate.
3. Minimize the given Boolean function in both SOP and POS using K-map and realize using basic gates: F(A,B,C,D) = E(0,1,2,5,7,8,9,10,13,15)
4. Explain 4-bit Binary Parallel Adder. Implement a full Adder using two half Adders.
5. Define combinational circuit. Design a binary to octal converter.
6. What is a synchronous sequential circuit? Explain RS NAND latch with block diagram, logic diagram, truth table, and timing diagram.
7. Define register. Explain serial-in serial-out register with working mechanism for data input 11010

Group C

Attempt any TWO questions.

8. Explain ring counter. Design a 3-bit asynchronous up counter with block diagram, count sequence table, and timing diagram.
9. Define ECL. Explain 3-bit even parity generator and checker.
10. Explain the design procedure of a clocked sequential circuit. Design a clocked sequential circuit whose state diagram is given in the figure**.**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