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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech II Year I Semester Examinations, September - 2021

DIGITAL LOGIC DESIGN

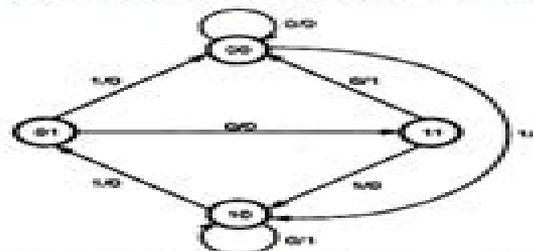
(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 75

Answer any five questions  
All questions carry equal marks

- 1.a) Write the steps involved in unsigned binary subtraction using complements with examples.  
b) Convert decimal number 456 to base 3, base 4, base 7, base 8 and base 16. [7+8]
- 2.a) Realize the logic function  $y = ABC + BCD + ACD$  using NAND gates.  
b) Draw the logic circuit for the expression  $((A + B)C)D$  using basic gates and also using only NAND gates. [7+8]
- 3.a) Find the minimum SOP expression using K-map for the function  $F(A,B,C,D) = \sum m(7, 9, 10, 11, 12, 13, 14, 15)$  and realize the minimized function using only NOR gates.  
b) What are the different hardware languages are available? How they are used for Digital circuit design? [8+7]
- 4.a) What is a decoder? Explain about 3-8 decoder with a logic diagram.  
b) Construct a 16:1 MUX using 4:1 multiplexers and hence analyze using truth table. [7+8]
- 5.a) Construct a sequential logic circuit with single input and single output by obtaining the state and excitation table for the given state diagram using JK Flip-Flop.



- b) What is a state diagram? Explain how to assign states using state assignment rules. [10+5]

# Logic Design Question Papers

**Brendan G. Carr**



## **Logic Design Question Papers:**

## Decoding **Logic Design Question Papers**: Revealing the Captivating Potential of Verbal Expression

In an era characterized by interconnectedness and an insatiable thirst for knowledge, the captivating potential of verbal expression has emerged as a formidable force. Its power to evoke sentiments, stimulate introspection, and incite profound transformations is genuinely awe-inspiring. Within the pages of "**Logic Design Question Papers**," a mesmerizing literary creation penned by a celebrated wordsmith, readers set about an enlightening odyssey, unraveling the intricate significance of language and its enduring affect our lives. In this appraisal, we shall explore the book's central themes, evaluate its distinctive writing style, and gauge its pervasive influence on the hearts and minds of its readership.

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