

B033315(033)

B. Tech. (Third Semester) Examination,

Nov.-Dec. 2021

(IT) AICTE

DIGITAL ELECTRONICS

Time Allowed : Three hours

Maximum Marks : ~~80~~ 100

Minimum Pass Marks 35

Note : Attempt all questions. Each question carries equal marks. Part (a) is compulsory and carries 4 marks. Answer any two from (b), (c) and (d) & carrying 8 marks each.

Unit-I

1. (a) What is don't-care condition?
- (b) Explain basic and universal logic Gates in details?
- (c) Explain basic theorem and properties of Boolean algebra with its example.

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- (d) Explain Binary to Gray and Gray to binary code conversion.

Unit-II

2. (a) Define the tabulation method.
- (b) Explain Full-Adder using two HALF Adder with its logic diagram.
- (c) Define Multiplexer? Explain 4 to 1 line multiplexer with suitable block diagram.
- (d) Define Decoder? Explain BCD to Decimal decoder with diagram.

Unit-III

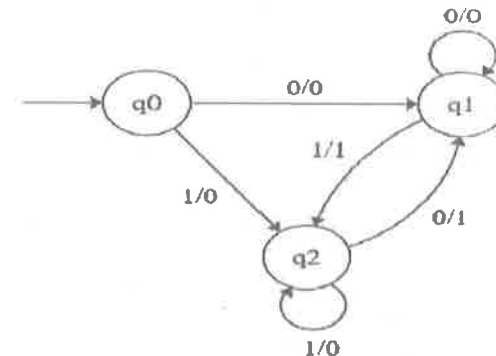
3. (a) What is Bi-directional Shift Register?
- (b) Draw the conversion of JK-Flip to RS-Flip-flop using all necessary steps.
- (c) Explain parallel in serial out shift register using block diagram.
- (d) Design a D-Flip-Flop using :
- (i) Logic Diagram

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- (ii) Graphical Symbol
- (iii) Truth Table
- (iv) Characteristics Table
- (v) Excitation Table
- (vi) Characteristics Equation (K-map Table)

Unit-IV

4. (a) Define State Assignment.
- (b) Define stgate table, state diagram, state equation and state reduction.
- (c) Draw the state reduction table and state transition table in Mealy Machine using below figure.



- (d) Explain difference between Moore and Mealy machine.

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Unit-V

5. (a) What is TTL?
- (b) Draw and explain basic concept of RAM and its types.
- (c) Explain PAL using block diagram and implementation table.
- (d) What is CMOS? Explain NMOS and PMOS with block diagram.

