

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-III Remedial Examination March 2010

Subject code: 130701

Date: 10 / 03 / 2010

Subject Name: Digital Logic Design

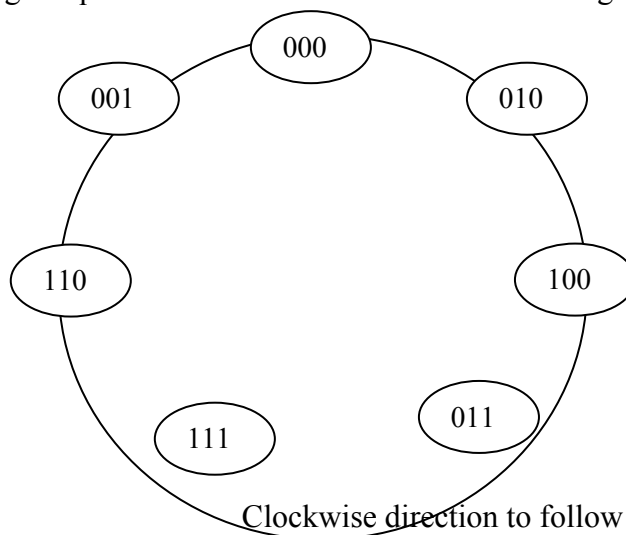
Time: 03.00 pm – 0.5.30 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define: Digital System. **07**
 Convert following Hexadecimal Number to Decimal :
 B28, FFF, F28
 Convert following Octal Number to Hexadecimal and Binary:
 414, 574, 725.25
- (b) Define : Integrated Circuit and briefly explain SSI, MSI, LSI and VLSI **07**
- Q.2** (a) Draw the logic symbol and construct the truth table for each of the **07**
 following gates.
 [1] Two input NAND gate [2] Three input OR gate
 [3] Three input EX-NOR gate [4] NOT gate
- (b) Give classification of Logic Families and compare CMOS and TTL **07**
 families
- OR**
- (b) Explain SOP and POS expression using suitable examples **07**
- Q.3** (a) Design a 4 bit binary to BCD code converter **07**
 (b) Design a full adder circuit using decoder and multiplexer **07**
- OR**
- Q.3** (a) Write short note on EEPROM, EPROM and PROM **07**
 (b) Define: [1] Comparator [2] Encoder [3] Decoder **07**
 [4] Multiplexer [5] De-multiplexer [6] Flip Flop [7] PLA
- Q.4** (a) Draw and explain the working of following flip-flops **07**
 [1] Clocked RS [2] JK
- (b) Convert SR flip-flop into JK flip-flop **07**
- OR**
- Q.4** (a) Design sequential counter as shown in the state diagram using JK flip-flops **07**



- Q.5** (a) Explain the working of 4 bit asynchronous counter
(b) Explain memory unit

07

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OR

- Q.5** (a) Explain the design of Arithmetic Logic Unit
(b) Explain Control Logic Design

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