Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

IT-3003 (CBGS)

B.E. III Semester

Examination, December 2017

Choice Based Grading System (CBGS)

Digital Circuit and System

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Convert the following numbers
   i) Octal (25) into binary and Hexadecimal
   ii) Hexadecimal (F4) into binary and octal
   b) Write DeMorgan's theorem and explain by taking a suitable example.

2. a) F = AB + CD + E implement this function with NOR gates.
   b) Explain multiplexer and demultiplexer circuits.

3. Simplify the Boolean function using k map.
   F(A, B, C, D) = sum of (0, 1, 2, 4, 5, 6, 8, 9, 12, 13, 14)

4. a) Implement AND, OR, NOT or XOR gate with universal gates NOR and NAND.
   b) Explain the working of Decoder and Encoder.

5. Explain flip-flops. List the various types of flip-flops? Explain any two flip-flop with taking a suitable example.

6. a) What do you understand by Bipolar and Unipolar logic families?
   b) Explain NMOS and CMOS logic.

7. a) Explain Schmitt trigger circuits.
   b) Write the purpose of analog to digital converters. Write any four application where analog to digital converter used.

8. Write a short notes (any two)
   a) Astable multivibrator
   b) RTL
   c) Synchronous counters

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