Roll No ....

EE/EX-403-CBGS

B.Tech., IV Semester

Examination, December 2020

Choice Based Grading System (CBGS)

Digital Electronics and Logic Design (DELD)

Time : Three Hours

Maximum Marks : 70

Note: i)   Attempt any five questions.

ii) All questions carry equal marks.

iii) Draw neat sketch, if required.

iv) In case of any doubt or dispute the English version question should be treated as final.

1.   a)   What is De-Morgan's theorem? Simplify the given expression using De-Morgan's theorem.   7

$$\overline{\overline{U + V\overline{\overline{W}}} + X\overline{\left(\overline{Y} + \overline{Z}\right)}}$$

$$\overline{\overline{U + V\overline{\overline{W}}} + X\overline{\left(\overline{Y} + \overline{Z}\right)}}$$

PTO

b) What are Exclusive-OR and Exclusive-NOR gates? Explain with truth table and diagram?   7

E³g³by   °

2. a) What is full substractor? Write its truth table and design the logic circuit.   7

{S>OmB©Z H$a|&

b) What is Multiplexer? Design the given expression using 4×1 multiplexer. F (A, B) = A B + A B   7

4×1

3. a) What do you mean by Master-Slave Flip-Flop? Explain with the help of diagrams and tables.   7

ì¶m»Ÿm H$a|&

b) Distinguish between Latch and Flip-Flop.   7

4. a) What is UP and DOWN counter? Give some applications of counter?   7

b) Write about Johnson counter and universal shift registers.   7

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5. a) Explain about PLA and PAL and give difference between them. 7

   b) What is RAM? 7
   a¡' ³¶m h¢?

6. a) Convert the following : 7
      i) $(312.4)_4$ to decimal
      ii) Binary code 10110 to Hexa code

      i) $(312.4)_4$
      ii) ~m¶Zar
   b) Design EX-OR gate with the help of NAND gates only.
   E³g-Aam EX-OR

7. a) Explain J-K flip-flop and D-flip-flop. 7

   b) Explain different types of registers. 7

8. Write short notes on : 14
   a) Parity generators and checkers
   b) BCD Adder
   c) Digital to Analog converters

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