

C. U. SHAH UNIVERSITY

Summer Examination-2020

Subject Name : Digital Electronics

Subject Code : 4TE03DEL1

Branch: B.Tech (CE)

Semester : 3

Date : 03/03/2020

Time : 02:30 To 05:30

Marks : 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

- Q-1 Attempt the following questions: (14)**
- a) If OR gate has 4 inputs, than how many combinations for output is possible? (01)
 - b) How many bytes is equal to 65536 bits? (01)
 - c) $(A59C)_{16} = (\quad)_8$ (01)
 - d) $(10110.1011)_2 = (\quad)_{10}$ (01)
 - e) State De-Morgan's Theorem. (01)
 - f) Convert binary code into gray code for 1001101. (01)
 - g) $(54A)_{16} = (\quad)_{10}$ (01)
 - h) $(670)_{10} = (\quad)_8$ (01)
 - i) Find binary addition for $11011.010 + 101.1011$ (01)
 - j) $(11010111.111101110)_2 = (\quad)_8$ (01)
 - k) Draw truth table for Ex-NOR gate for two inputs. (01)
 - l) $(1011011)_2 - (10010)_2 = (\quad)_2$ (01)
 - m) Which gates are considered as universal gates? (01)
 - n) Draw truth table for 8 to 3 encoder. (01)

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
- (a) What is logic circuit? Draw circuit diagram and truth tables of basic logic gates. (06)
 - (b) Draw circuit diagram and truth table for Universal Gates. (04)
 - (c) Draw circuit diagram and truth table to prove De-Morgan's theorem. (04)
- Q-3 Attempt all questions (14)**
- (a) What is flip flop? Explain J-K flip flop in detail. (07)
 - (b) Explain full adder with circuit diagram and truth table. (07)
- Q-4 Attempt all questions (14)**
- (a) Simplify following Boolean function using K-map $F(w,x,y,z) = \sum(1,3,7,11,15)$ and it has don't care conditions $d(w,x,y,z) = (0,2,5)$. (07)
 - (b) Simplify following Boolean function using K-map $F(d,e,f,g) = (1,3,5,6,7,11,12,14,15)$ (07)



