C.U.SHAH UNIVERSITY
Summer Examination-2018

Subject Name : Digital Electronics

Subject Code : 4TE03DEL1   **Branch: B.Tech (CE)**

Semester : 3   **Date : 28/03/2018**   **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)	Find $(100)_2 = (?)_{10}$	1
	b)	Find binary addition of 1000+0111.	1
	c)	Solve $(50)_{10} = (?)_2$	1
	d)	Solve $(4E)_{16} = (?)_2$	1
	e)	Find binary to gray number system of 1000.	1
	f)	Find 1st complement of 01010.	1
	g)	Find 2nd complement of 0011.	1
	h)	What is Fan-in?	1
	i)	An OR gate has 6 inputs. The number of input words in its truth table are	1
		(a)4 (b)16 (c) 64 (d) 128	
	j)	The binary addition $1 + 1+ 0$ gives	1
		(a) 1 (b) 10 c) 0 (d) 11	
	k)	Radix of decimal number system is	1
		(a) 16 (b) 10 (c) 4 (d) 2	
	l)	The OR gate output will be low if the two inputs are	1
		(a) 00 (b) 01 (c) 10 (d) 11	
	m)	How many Flip-Flops are required for mod–4 counter?	1
		(a) 2 (b) 6 (c) 3 (d) 4	
	n)	The number of control lines for a 8 – to – 1 multiplexer is	1
		(a) 2 (b) 3 (c) 4 (d) 5	

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

Q-2		**Attempt all questions**	**(14)**
	(a)	What is Logic Gate? List out category of Logic gate. Explain any one category.	**7**
	(b)	What is K-map? Draw Structure of different types of variable.	**7**

Q-3		**Attempt all questions**	**(14)**
	(a)	Explain Full Adder with Truth table.	**7**
	(b)	Explain Sum of Product and Simplify $\sum$ (0 to 7).	**7**

Q-4		**Attempt all questions**	**(14)**
	(a)	Draw following circuit.	**7**
		1) f = (abc + a'b'c)'	
		2) f = ab + b'c' + (ac')'	
	(b)	Explain POS and Simplify π(0 to 15).	**7**

Q-5		**Attempt all questions**	**(14)**
	(a)	Explain Master Slave Flip Flop with proper circuit.	**7**
	(b)	Explain 4 to 2 line Encoder with proper circuit.	**7**

Q-6		**Attempt all questions**	**(14)**
	(a)	What is Register? Explain 8-bit Shift Register with Circuit.	**7**
	(b)	What is Counter? Explain 8-bit Shift Counter.	**7**

Q-7		**Attempt all questions**	**(14)**
	(a)	Write a short note on TTL.	**7**
	(b)	Explain 8 x 1 Multiplexer.	**7**

Q-8		**Attempt all questions**	**(14)**
	(a)	Write a short note on ECL.	**7**
	(b)	Differentiate between MOS and CMOS.	**7**