	C.U.SHAH UN Winter Exami					
Subject Name : Digital Electronics						
Subject Code: 4TE03DEL1		Branch: B.Tech (CE)				
Semester: 3	Date: 04/12/2018	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)	Define Quad word.	1
	b)	Find out binary Subtraction of 1010110 – 101010	1
	c)	Solve $(25)_{10} = (?)_2$	1
	d)	Solve $(1001)_2 = (?)_{10}$	1
	e)	Find out binary to gray number system of 11101.	1
	f)	Find out 1 st complement of 110011.	1
	g)	Find out 2 nd complement of 1010.	1
	h)	What is Fan-out?	1
	i)	An AND gate has 4 inputs. The number of input words in its truth table are	1
		(a)4 (b)16 (c) 64 (d) 128	
	j)	Give size of one byte in bit size.	1
	k)	Radix of Hexadecimal number system is	1
		(a) 16 (b) 10 (c) 4 (d) 2	
	1)	Find out gray to binary number system of 1010.	1
	m)	How many Flip-Flops are required for mod–16 counter?	1
		(a) 2 (b) 6 (c) 3 (d) 4	
	n)	The number of control lines for a $16 - to - 1$ multiplexer is	1
	,	(a) 2 (b) 3 (c) 4 (d) 5	
Atten	npt any f	our questions from Q-2 to Q-8	
0.2		Attornet all greations	(14)
Q-2	(-)	Attempt all questions	(14)
	(a)	What is Logic Circuit? List out category of Logic gate. Explain Basic gate.	7
	(b)	Explain Full Subtractor with Truth table.	7
Q-3		Attempt all questions	(14)
	(a)	What is Karnaugh Map? Draw Structure of different types of k-map variable combination.	7



	(b)	Explain Sum of Product and Simplify Σ (3,7,11,12,13,14,15)	7
Q-4		Attempt all questions	(14)
	(a)	Explain 3 to 8 line Decoder with proper circuit.	7
	(b)	Explain POS and Simplify $\pi(0,1,2,4,5,6,8,9,10)$	7
Q-5		Attempt all questions	(14)
	(a)	What is Shift Register? Explain 8-bit Shift Register with proper circuit.	7
	(b)	Draw following circuit.	7
	(,-)	1) $f = (pq + p'q')$	
		2) $f = a'b + b'c + ac'$	
Q-6		Attempt all questions	(14)
	(a)	Explain J-K Flip Flop with proper circuit.	7
	(b)	What is Asynchronous Counter? Explain 8-bit Shift Counter.	7
Q-7	()	Attempt all questions	(14)
	(a)	Explain TTL with their different types.	7
	(b)	Write a short note on MOS and CMOS.	7
Q-8		Attempt all questions	(14)
_	(a)	Write a note on Emitter coupled logic.	7
	(b)	Explain 1X4 De-Multiplexer.	7
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