Enrollment No: _____ Exam Seat No: _____ C. U. SHAH UNIVERSITY **Summer Examination-2020**

Subject Name : Digital Electronics

v		0				
Subject Code : 4TE03DEL1			Branch: B.Tech (CE)			
Seme	ster : 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. 						
0.1		Attempt the fallering gradience		(14)		
Q-1	a)	Attempt the following questions: If OR gate has 4 inputs, than how m possible?	any combinations for output is	(14) (01)		
	b)	-	nits?	(01)		
	c)					
	d) $(10110.1011)_2 = ($) ₁₀			(01) (01)		
e) State De-Morgan's Theorem.				(01)		
f) Convert binary code into gray code for 1001101.				(01)		
	g)	$(54A)_{16} = ()_{10}$		(01)		
	h)	$(670)_{10} = ()_8$		(01)		
	i)	Find binary addition for 11011.010		(01)		
	j)			(01)		
	к) l)	Draw truth table for Ex-NOR gate f $(1011011)_2 - (10010)_2 = ()_2$	or two inputs.	(01)		
		Which gates are considered as universe.	arsal gates?	(01) (01)		
	,	Draw truth table for 8 to 3 encoder.		(01)		
Atten		four questions from Q-2 to Q-8		(01)		
	-r··					
Q-2		Attempt all questions		(14)		
	(a)	What is logic circuit? Draw circuit	liagram and truth tables of basic log	ic (06)		
		gates.				
	(b)	Draw circuit diagram and truth table		(04)		
03	(c)	Draw circuit diagram and truth table	e to prove De-Morgan's theorem.	(04) (14)		
Q-3	(a)	Attempt all questions What is flip flop? Explain J-K flip f	lon in detail	(14) (07)		
	(a) (b)	Explain full adder with circuit diagr	-	(07)		
Q-4	(0)	Attempt all questions		(14)		
τ.	(a)	Simplify following Boolean functio	n using K-map F(w,x,y,z) =	(07)		
		$\sum(1,3,7,11,15)$ and it has don't care				
	(b)	Simplify following Boolean functio (1,3,5,6,7,11,12,14,15)	n using K-map F(d,e,f,g) =	(07)		



Q-5		Attempt all questions	(14)
•	(a)	Explain 3 to $\hat{8}$ line decoder with circuit diagram and truth table.	(07)
	(b)	Explain 1×4 demultiplexer in detail.	(07)
Q-6		Attempt all questions	(14)
	(a)	What is Register? Explain 8-bit Shift Register with Circuit.	(07)
	(b)	What is Asynchronous Counter? Explain 8-bit Shift Counter.	(07)
Q-7		Attempt all questions	(14)
•	(a)	Explain SOP and POS with suitable diagram.	(07)
	(b)	Explain Master Slave flip flop in detail.	(07)
Q-8		Attempt all questions	(14)
	(a)	Write a note on MOS and CMOS.	(07)
	(b)	Explain ECL logic gate families in detail.	(07)

