Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER-I(New course) • EXAMINATION - WINTER- 2015

Subject Code: 2712602 Subject Name: CMOS CIRCUIT DESIGN-I			Date: 01/01/2016	
Tiı	me:2 truction 1.	:30 pm to 5:00 pm Total Marks:	70	
Q.1	(a)	Define following: (i) CMRR (ii) ICMR (iii) Output Offset Voltage (iv) PSRR (v) Differential Mode Voltage (vi) Common Mode Voltage (vii) Slew Rate.	07	
	(b)	Write a note on Static & Dynamic Power Dissipation in CMOS Circuits.	07	
Q.2	(a) (b)	Briefly discuss on MOS Device Capacitances. Discuss different layout techniques.	07 07	
	(b)	OR Discuss Linear Carry Select Adder for 4 bit as well as 16 bit. Also show critical path in gray shad in 16 bit adder block diagram.	07	
Q.3	(a) (b)	What are the Mixed Signal VLSI issues in CMOS Technologies? Write a note on Two Stage CMOS Op-Amp in brief. OR	07 07	
Q.3	(a) (b)	Explain Gilbert Cell. Discuss in brief Sense Amplifier.		
Q.4	(a) (b)	Explain the various second order effect in MOSFET. Discuss Active Current Mirror.	07 07	
		OR		
Q.4	(a) (b)	Draw High Frequency Model of Common Gate Stage. Explain Dynamic Threshold Scaling.	07 07	
Q.5	(a) (b)	Derive $I_{D(Sat)}$ and $I_{D(Lin)}$ for n channel MOSFET. Discuss Cascode Current Mirrors.	07 07	
Q.5	(a) (b)	OR Explain in brief Slew Rate of the Differential Amplifier. Discuss following: (I) Channel-Length Modulation	07 07	
		(II) Reducing the power in standby (or Sleep) Mode.		
