Enrolment No.__

GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER- III EXAMINATION – SUMMER 2015

Subject code: 130902Date: 29/05/2Subject Name: ANALOG AND DIGITAL ELECTRONICSTime: 02.30pm-05.00pmTotal Marks:			5/2015 ks: 70	
Q.1	(a)	Derive the gain and input resistance for equation for dual input and	07	
	(b)	Explain block diagram of op-amp. What are the ideal characteristics of opamp?	07	
Q.2	(a)	Derive gain, input resistance and output resistance equation for voltage series feedback for on amp	07	
	(b)	Derive the following term regarding op-amp: 1)Input bias current 2) Input offset current 3) CMRR 4) PSSR 5) Slew rate 6) Output offset voltage 7) Differential gain.	07	
	(b)	Explain the differential amplifier using two op-amp. Derive its gain equitation.	07	
Q.3	(a)	Explain pin diagram of IC 555. Explain function of all pins.	07	
	(b)	Explain three pin voltage regulator IC. Explain LM 78XX and LM 79XX	07	
		OR		
Q.3	(a)	Subtract (a) 69_{16} - 43_{16} (b) 27_{16} - 73_{16} using the 2's complement arithmetic.	07	
	(b)	Explain AND and OR gate using diode and transistor circuit.	07	
Q.4	(a)	Explain De Morgan's theorem.	07	
	(b)	Explain Full adder and Half adder circuit	07	
		OR		
Q.4	(a)	Explain three variables and four variables K-map.	07	
	(b)	Explain NAND gate S-R Flip flop.	07	
Q.5	(a)	Explain J-K flip-flop and Master Slave J-K flip-flop.	07	
	(b)	Explain Multiplexer and De-multiplexer. OR	07	
Q.5	(a)	Explain Astable Multivibrator using IC 555.	07	
	(b)	Explain Adder and Subtractor using operational amplifier.	07	
