Seat No.: _____ Enrollment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI • EXAMINATION – SUMMER 2015

Subject Code: 160801 Date:01/05/2015

Subject Name: Integrated Circuits &Application

Time:10.30AM-01.00PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Draw and explain the functional block diagram of IC 555.	**07**
	(b)	Explain the following parameters of OPAMP (i)Input offset voltage (ii)Input bias current (iii)CMRR (iv)Slew rate (v)PSRR	**07**
Q.2	**(a)**	List the advantages of negative feedback, explain any one application of OPAMP in open loop configuration with output waveforms.	**07**
	(b)	Define Error voltage and Derive its equation for Op-Amp.	**07**
		OR	
	(b)	Derive the expression for Voltage gain (A_V) and input resistance with feedback (R_{iF}) for voltage shunt feedback amplifier.	**07**
Q.3	**(a)**	Explain Schmitt trigger circuit using OPAMP.	**07**
	(b)	What is V to I converter? Explain the circuit of low voltage DC voltmeter.	**07**
		OR	
Q.3	**(a)**	Explain the practical integrator circuit. Also draw its frequency response	**07**
	(b)	Explain Instrumentation Amplifier using transducer bridge with its application.	**07**
Q.4	**(a)**	Describe a sample and hold circuit and give its applications.	**07**
	(b)	Explain a circuit using OPAMP which can produce triangular waveform at its output.	**07**
		OR	
Q.4	**(a)**	Explain the application of PLL in FSK demodulation.	**07**
	(b)	Explain IC 555 as a Monostable multivibrator .Give the expression for the time delay.	**07**
Q.5	**(a)**	Explain Astable multivibrator using Op-Amp.	**07**
	(b)	Draw the block diagram of PLL and explain each block.	**07**
		OR	
Q.5	**(a)**	Draw and Explain the block diagram representation of a typical Op-Amp.	**07**
	(b)	Draw and explain a 3 input summing, scaling and averaging circuit using OPAMP.	**07**

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