Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III (NEW) - EXAMINATION – SUMMER 2018

Subject Code:2130902 **Date:23/05/2018**

Subject Name:Analog Electronics

Time:10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

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

			MARKS
Q.1	**(a)**	Draw block-diagram representation of a typical op-amp.	**03**
	(b)	Define: (1) PSRR (2) Input bias current (3) Input offset voltage (4) SVRR.	**04**
	(c)	Draw the IC-555 based astable multivibrator circuit and derive equation for frequency of output waveform.	**07**
Q.2	**(a)**	Draw transistor C-E amplifier circuit. Draw its ac equivalent circuit.	**03**
	(b)	Draw and explain stages of instrumentation amplifier.	**04**
	(c)	Explain how Op-amp works as an average amplifier.	**07**
		OR	
	(c)	What is transistor load line? Explain how to obtain it. Define Q- point on the load line.	**07**
Q.3	**(a)**	Draw and explain OP-AMP as a zero crossing detector.	**03**
	(b)	Give comparison of: astable, monostable and bistable multivibrator.	**04**
	(c)	What do you mean by slew rate in an OP-AMP? Also mention about causes of slew rate and explain its significance in applications.	**07**
		OR	
Q.3	**(a)**	Compare various transistor amplifier configurations.	**03**
	(b)	What is power amplifier? Give important features of power amplifier circuit.	**04**
	(c)	What will be effect of voltage series feedback amplifier on input resistance, gain and stability?	**07**
Q.4	**(a)**	What are the merits & demerits of hybrid parameters?	**03**
	(b)	Compare different types of power transistors.	**04**
	(c)	Classify the types of negative feedback & explain each in brief.	**07**
		OR	
Q.4	**(a)**	What are the applications of OP- AMP based schmitt trigger circuit.	**03**
	(b)	Explain application of OP-AMP based Wein bridge oscillator.	**04**
	(c)	With the help of neat diagram explain the circuit of voltage to current converter. Also state its applications.	**07**
Q.5	**(a)**	Compare between active and passive filters.	**03**
	(b)	Explain with the help of circuit diagram, the operation of second order Butterworth high pass filter.	**04**
	(c)	Discuss the operation of LM317 voltage regulator.	**07**
		OR	

Q.5	**(a)**	List out the different performance parameter of a power supply.	**03**
	(b)	Draw basic block schematic of 78×× series three terminal voltage regulator ICs.	**04**
	(c)	What is PLL? Discuss different applications of PLL in detail.	**07**

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