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

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2142405 **Date: 01/06/2017**

Subject Name: Analog Electronics and Its Applications

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		**Short Questions**	**14**
	1	Rectification Efficiency of HW Diode Rectifier with R Load is _____%.	
	2	Ripple Factor of FW Diode Rectifier with R Load is _____.	
	3	PIV for Diode Bridge Rectifier is _____ volts.	
	4	CE Configuration of BJT is commonly used because ----------.	
	5	AC / DC Load lines decides _____ in amplifier.	
	6	Voltage Regulated IC 7812 is used for _____ volts.	
	7	Full Form of CMRR is _____& PSRR is _____.	
	8	Zero Crossing Detector circuit is one type of _____.	
	9	NIC & FDNR are types of ----------.	
	10	Oscillator Circuit needs _____ input(s).	
	11	IC-555 is invariably used in applications such as ----------.	
	12	Logic Gates belongs to _____ scale Integrated Circuit.	
	13	Slew Rate is the measurement of _____in Op-amp.	
	14	Filter Circuits block the ------- component & pass ------- component.	
Q.2	**(a)**	Compare Diode with Bipolar Junction Transistor.	**03**
	(b)	Give comparative statements in Tabular form for CE, CB, CC Configuration of BJT.	**04**
	(c)	Draw and explain Full Wave Rectifier circuit diagram and various waveforms having capacitor filter for R – Load.	**07**
		OR	
	(c)	Draw and explain Full Wave Rectifier circuit diagram and various waveforms without capacitor filter for RL-Load.	**07**
Q.3	**(a)**	Draw Class-C amplifier circuit and specify its applications.	**03**
	(b)	Draw Class – A amplifier circuit and specify its applications and limitations.	**04**
	(c)	Explain 78xx and 79xx voltage regulators. Draw necessary circuit diagram to get 12-volt constant output using 7812 IC.	**07**
		OR	
Q.3	**(a)**	Discuss Ideal Op-amp.	**03**
	(b)	Discuss practical Op-amp Characteristics.	**04**
	(c)	Draw the basic block diagram, symbol, characteristics and equivalent circuit of Operational Amplifier. List the type and important parameters of Op-amp.	**07**
Q.4	**(a)**	Draw Peak Sample and Hold Circuit using Op-amp.	**03**

	(b)	Draw and explain Precision Rectifier Detector using Op-amp.	**04**
	(c)	Explain clipper and clamper circuits using Op-amp with necessary diagram & waveforms. Give applications of it.	**07**

OR

Q.4	**(a)**	Discuss Phase Shift Oscillator.	**03**
	(b)	Discuss Wien Bridge Oscillator.	**04**
	(c)	Draw and explain the circuit diagram and various waveforms for Triangular Wave Generator.	**07**
Q.5	**(a)**	Discuss MF5 switched Capacitor Filter.	**03**
	(b)	Draw block diagram of V/F converter and explain its working.	**04**
	(c)	Explain bistable multivibrator using 555. Give necessary equations and draw neat diagram and waveforms.	**07**

OR

Q.5	**(a)**	Enlist the possible name of logic gates. Enumerate the advantages of logic gates.	**03**
	(b)	Construct and explain a logic gate using Discrete Components.	**04**
	(c)	Give possible comparative statements for DTL, TTL & RTL in tabular forms.	**07**

****