

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (NEW) EXAMINATION – WINTER 2017

Subject Code: 2130902

Date: 17/11/2017

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) Define: (i) Input offset voltage (ii) Input offset current (iii) Differential input resistance	03
(b) Explain break frequency and bandwidth.	04
(c) Draw and explain the block diagram of an Op-amp.	07
Q.2 (a) Explain thermal drift.	03
(b) State the characteristics of the ideal Op-amp.	04
(c) Discuss why negative feedback is suitable for amplifier applications.	07
OR	
(c) Describe the phenomenon of common mode rejection ratio (CMRR).	07
Q.3 (a) State limitations of Op-amp as comparators.	03
(b) Explain Slew Rate.	04
(c) Explain summing, scaling and averaging amplifier when Op-amp is connected in inverting mode.	07
OR	
Q.3 (a) Explain in brief Zero Crossing Detector (ZCD).	03
(b) Describe differential input and differential output amplifier.	04
(c) Discuss integrator circuit using Op-amp.	07
Q.4 (a) Explain Butterworth response.	03
(b) Explain Schmitt Trigger circuit.	04
(c) Explain Wein bridge oscillator.	07
OR	
Q.4 (a) List the two criteria for oscillations.	03
(b) Explain the block schematic diagram of 78XX series.	04
(c) Write a note on sawtooth wave generator.	07
Q.5 (a) Discuss any one application of PLL.	03
(b) Briefly describe an All pass filter.	04
(c) Describe working of 555 Timer in astable mode.	07
OR	
Q.5 (a) Give applications of astable multivibrator.	03
(b) Describe Sample and Hold circuit.	04
(c) Explain VCO and state its applications.	07
