

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (NEW) EXAMINATION – SUMMER 2019****Subject Code: 2130902****Date: 07/06/2019****Subject Name: Analog Electronics****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

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

		<b>MARKS</b>
<b>Q.1</b>	(a) Define: (i) Input offset voltage (ii) Input bias current (iii) Cross over distortion in amplifier	<b>03</b>
	(b) Explain the use of external offset voltage compensation circuits in op-amps.	<b>04</b>
	(c) Classify the types of negative feedback and explain each in brief.	<b>07</b>
<b>Q.2</b>	(a) State the characteristics of the ideal Op-amp.	<b>03</b>
	(b) Draw and explain Class B Push Pull Amplifier.	<b>04</b>
	(c) Draw a practical inverting amplifier and derive expressions for closed loop voltage gain, input resistance, output resistance.	<b>07</b>
<b>OR</b>		
	(c) Describe the phenomenon of common mode rejection ration (CMRR).	<b>07</b>
<b>Q.3</b>	(a) State characteristics of comparators.	<b>03</b>
	(b) Explain Slew Rate.	<b>04</b>
	(c) Describe with the help of neat diagram the operation of an instrumentation amplifier using three basic op-amps.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Explain in brief Window Detector.	<b>03</b>
	(b) Describe differential input and differential output amplifier.	<b>04</b>
	(c) Discuss differentiator circuit using Op-amp.	<b>07</b>
<b>Q.4</b>	(a) Draw hybrid model for CE and CB configuration.	<b>03</b>
	(b) Compare: Comparator and Schmitt trigger circuits.	<b>04</b>
	(c) Explain Colpitt's oscillator.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) List the two criteria for oscillations.	<b>03</b>
	(b) Explain the block schematic diagram of 79XX series.	<b>04</b>
	(c) Write a note on triangular wave generator.	<b>07</b>
<b>Q.5</b>	(a) Draw and discuss block diagram of PLL.	<b>03</b>
	(b) Briefly describe LM317IC.	<b>04</b>
	(c) Describe working of 555 Timer in bistable mode.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Give applications of bistable multivibrator.	<b>03</b>
	(b) Explain in brief the applications of IC555.	<b>04</b>
	(c) Explain voltage to current converter with grounded load.	<b>07</b>

\*\*\*\*\*