(7) Tilt

Total Marks: 70

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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (OLD) - EXAMINATION - SUMMER 2017 Date: 06/06/2017

Subject Code: 141101 **Subject Name: Advance Electronics** Time: 10:30 AM to 01:00 PM Instructions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. Define the following terms: **O.1** (a) (1) Rise time (3) Non linear distortion (5) CMRR (2) Noise margin (4) Slew rate (6) Fan out Compare logic families based on speed, fan-in, fan-out, noise immunity, power **(b)** dissipation, and application. Draw the hybrid π model for CE configuration and also explain why we cannot 07 Q.2 (a) use the h-parameters for the analysis at high frequencies.

Explain working of Hartley oscillator. Derive the expression for frequency of 07 **(b)** oscillation.

OR

- **(b)** Explain working of RC Phase shift oscillator. Derive the expression for frequency 07 of oscillation.
- **(a)** What is feedback? List the advantages of negative feedback. Derive relation 07 Q.3 between gain with and without feedback in a transistor amplifier.
 - Show the circuit and explain how to measure Input Bias Current and CMRR of an 07 **(b) OP-AMP**.

OR

- **(a)** Explain voltage series, voltage shunt, current series and current shut feedback in Q.3 07 brief.
 - **(b)** Draw an IC OP Amp in block diagram form. Identify each stage by function. 07
- What are the fundamental different between an amplifier and oscillator? Explain 07 0.4 **(a)** concept of oscillation with Barkhausen criteria.
 - Draw and explain the counter type A/D converter. **(b)**

OR

- Explain the analysis of Dual Input and Balanced Output Differential Amplifier. 07 0.4 **(a) (b)** Describe in brief about the distortion in amplifiers. 07
- Describe the operation of successive approximation ADC with neat sketch. **Q.5 (a)** 07
 - List the characteristics of ideal OP-AMP. Derive the expression of voltage gain **(b)** 07 for inverting and non inverting mode of OP-AMP.

OR

- For Dual slop integrator type ADC: 07 Q.5 **(a)** 1 Draw basic circuit. 2 Explain its working. 3 List its advantages over other type of ADCs. 4 List it's applications.
 - (b) Explain weighted resistor DAC. ******

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