Seat No.:	Enrolment No

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER- II(New course) • EXAMINATION (Remedial) - WINTER- 2015 Subject Code: 2720511 Date: 15/12/2015 Subject Name: CMOS CIRCUIT DESIGN - I Time: 2:30 pm to 5:00 pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 07 **Q.1** Explain in short (a) (i) Threshold voltage (ii) Noise margin. (iii) Circuit design levels. Explain input output characteristic of CS configuration. **07** (b) **Q.2** Write details note on MOSFET Oxide capacitance. **07 (b)** Explain difference between single ended and differential operation. **07** OR Explain I/V characteristic of MOS. **07** (b) Q.3 Describe the frequency response of source followers. **07** (a) Explain compensation of two stage op amp and also explain other compensation **07 (b)** techniques. OR Describe the two stage op-amp and define slew rate & common mode feedback. **07** 0.3 (a) Explain cascode current mirrors circuit. **07** (b) What aspects of the performance of an amplifier are important? **07 Q.4** (a) **(b)** Explain common source stage with diode connected load. **07** OR Describe the MOS small signal model. **Q.4** (a) 07 Explain basic differential pair and analysis. **07** (b) Q.5 (a) Explain 3 ó stage ring oscillator. 07 Explain differential pair with MOS load. **07** (b) OR **Q.5** Explain Gilbert cell. **07** (a) (b) Describe and analyze the CMOS inverter. 07
