

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-III • EXAMINATION – SUMMER 2013

Subject Code: 130902**Date: 27-05-2013****Subject Name: Analog and Digital Electronics****Time: 02.30 pm - 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.

- Q.1** (a) Explain OP-AMP as a comparator. **07**
 (b) State and explain De Morgan's theorem. **07**
- Q.2** (a) Write short note on D flip flop. **07**
 (b) Define any seven OP-AMP parameters. **07**
- OR**
- (b) Explain Direct coupled and RC coupled amplifiers with its frequency response. **07**
- Q.3** (a) Write short note on integrator. **07**
 (b) Describe astable multivibrator based on IC 555 and OP-AMP. **07**
- OR**
- Q.3** (a) Draw and explain basic block schematic of 78XX series three terminal voltage regulator ICs. **07**
 (b) Explain binary addition, subtraction, division and multiplication with example. **07**
- Q.4** (a) Write short note on gray code. **07**
 (b) Explain NOR gate as a universal gate. **07**
- OR**
- Q.4** (a) Define any seven performance characteristics of digital ICs. **07**
Q.4 (b) Write down truth tables for BCD to seven segment decoder for common anode and common cathode display. **07**
- Q.5** (a) Write short note on half adder and full adder. **07**
 (b) Explain S-R flip flop. **07**
- OR**
- Q.5** (a) Write down modes of operation of shift register. Explain any one mode of operation in detail. **07**
 (b) What is the basic difference between synchronous and asynchronous counter? Explain four bit synchronous up counter. **07**
