Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-Vth Examination December 2010

Subject code: 151006 Subject Name: Applied Electronics

Date: 21 /12 /2010 Time: 03.00 pm - 05.30 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)** What is regulated power supply ? Draw and explain block diagram of SMPS. Also write advantage of SMPS. **07**

(b) Draw and explain the operational amplifier's closed loop configuration with necessary equation and compare all. **07**

Q.2 **(a)** Draw and explain block diagram of IC 555. Also explain the Pin connection of IC 555 **07**

(b) Design a astable multivibrator using IC 555 and draw its circuit diagram which generate output signal with frequency of 1kHz and duty cycle of 75%. **07**

OR

(b) Design monostable mutivibrator using IC 555 and draw the circuit diagram which gives output of pulse width of 10 μs. What voltage must be applied to the CONTROL pin to stretch pulse width from **07**

(i) 10 μs to 20 μs. (ii) 10 μs to 5 μs.

Q.3 **(a)** Give detail classification of the transducer and explain each of them in detail. **07**

(b) What is LVDT ? Explain principle and operation of LVDT. Also list the advantage and application of LVDT. **07**

OR

Q.3 **(a)** What is LCD? List the types of Liquid crystal and explain any two of them. **07**

(b) What is SCR? With required figure explain the operation and I-V characteristics of SCR. **07**

Q.4 **(a)** What is LASCR? Draw and explain construction and characteristics of LASCR in detail. **07**

(b) What is storage oscilloscope? Explain principle and working of storage oscilloscope. Also write the advantages and disadvantages of storage oscilloscope compare to CRO. **07**

OR

Q.4 **(a)** What is multimeter ? Draw and explain the block diagram of Digital Multimeter. Give comparison of analog and digital mutimeter. **07**

(b) With necessary figure, Explain block diagram, operation, and future of washing machine. **07**

Q.5 **(a)** What is universal Gate ? Explain NOR and NAND gate as a universal Gate. **07**

(b) Obtain minimal Sum Of Product for the function F(A,B,C,D,E) ={0,2,4,6,9,11,13,15,17,,21,25,27,29,31}. **07**

OR

Q.5 **(a)** Draw the block diagram of CD player and explain each blocks in detail. **07**

(b) Find out the Boolean expression of the Full Adder sum and carry. Using by same expression give realization of Full adder circuits. **07**

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