

B. Tech Degree VI Semester Examination April 2011

EE 605 ELECTRONIC INSTRUMENTATION (2002 Scheme)

Time : 3 Hours

Maximum Marks : 100

- I. (a) (i) What are the ideal characteristics of all op amp?
(ii) Draw the equivalent circuit of an op amp.
(iii) Draw the ideal voltage transfer curve of an op amp.
(b) Give two reasons why an open loop op amp is not suitable for linear applications. (15)
(5)
- OR**
- II. (a) What is precision rectifier? Design a precision full wave rectifier to get a negative average voltage. (10)
(b) Explain (i) ideal differentiator (ii) ideal integrator. (10)
- III. (a) What is a comparator? What is the difference between a basic comparator a Schmitt Trigger? (6)
(b) (i) Draw the functional diagram of 723 voltage regulator. (8)
(ii) Explain current limit protection. (6)
- OR**
- IV. (a) Draw the circuit diagram of monostable multivibrator using 555 IC. What is the expression of pulse width? (8)
(b) What is PLL? Draw the block diagram and explain its operation. Define capture range and lock range of PLL. (12)
- V. (a) Explain the different methods of measurement. (10)
(b) What is thermistor? Explain how temperature is measured using thermistor. Give its applications. (10)
- OR**
- VI. (a) Define transducer. Classify transducers. Give examples for each. (10)
(b) Explain the operation of strain gauge. Derive the expression for gauge factor. (10)
- VII. (a) Elaborate the constructional details of LVDT and explain its operation as a pressure transducer. (10)
(b) Write notes on: (i) diaphragms (ii) bellows. (10)
- OR**
- VIII. (a) Explain the principle of piezo-electric transducers. What are the materials used for making them? Mention its applications. (10)
(b) Give an account of principle and application of thermocouple. (10)
- IX. (a) With the help of a diagram explain electronic multimeter. (10)
(b) Explain the horizontal deflection system of CRO. (10)
- OR**
- X. With the help of a diagram explain the working of a vector impedance meter. (20)