C 48098

FOURTH SEMESTER B.TECH. (ENGINEERI **EXAMINATION, JUNE 2008**

EC 2K 406 - ELECTRONIC INSTRUMENTATION

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I (a) Define and explain accuracy and precision of an experiment.
 - (b) What are the types of errors in an instrumentation system? List them and explain.
 - (c) What are the basic requirements of a transducer? Explain.
 - (d) What are the types of strain gauge? Explain them with neat sketches.
 - (e) What are the limitations of ordinary CRO? Explain.
 - (f) Explain the principle of IC tester in detail.
 - (g) What is a data acquisition system? Explain its principle.
 - (h) Explain the advantages of digital counters.

 $(8 \times 5 = 40 \text{ marks})$

II. (a) Explain the basic principle of electronic voltmeter and electronic ammeter with neat sketches.

Or

(b) Explain the basic principle of operation of digital multimeter with a neat sketch.

- III. (a) (i) Differentiate active transducer from passive transducer. Explain. Give example.
 - (ii) State and explain piezo electric effect.

Or

- (b) Explain in detail the principle of
 - (i) Pressure transducer.
 - (ii) Flow transducer.
 - (iii) Thermistor.

IV. (a) Draw a neat block diagram of digital storage oscilloscope and explain its principle in detail Or

(b) Write short notes on

- (i) Electronic LCR meter.
- (ii) Power meter.

(iii) Q-meter.

(a) Explain the principle and applications of frequency counter and time interval counter with V neat sketches.

Or

(b) Draw a neat block diagram for up based temperature control system. Explain its principle of operation in detail.

 $(4 \times 15 = 60 \text{ marks})$