

**D 23448-A**

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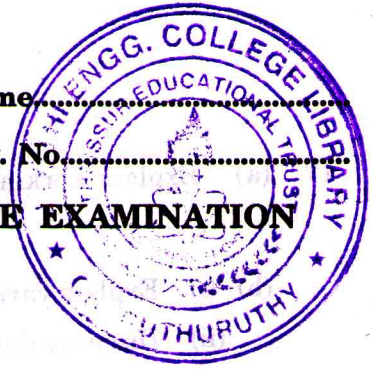
Name .....

Reg. No. ....

**FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION  
DECEMBER 2011**

**AI 04 506—TRANSDUCERS**

(2004 Admissions)



Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

- I. (a) List out selection criteria for selecting a transducer for a particular application.  
(b) State principle of a thermistor.  
(c) Define residual voltage is a LVDT.  
(d) Draw the characteristics of a photodiode and mention its applications.  
(e) Mention advantages of seismic accelerometer.  
(f) Why are dummy gauges used ? In what way do they affect the output of a strain gauge bridge.  
(g) Define the term pH.  
(h) State principle of a say bolt viscometer.

(8 × 5 = 40 marks)

**Part B**

**Unit I**

- II. (a) Explain working principle of a strain gauge. Also derive strain resistivity relation.

*Or*

- (b) Discuss principle of operation of a thermistor. Mention merits and demerits of a thermistor is comparison to a wire wound resistance coil.

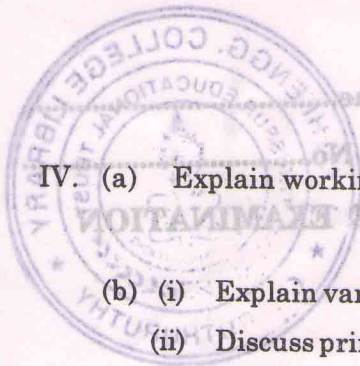
**Unit II**

- III. (a) Discuss construction and working of a Linear variable Differential Transformer.

*Or*

- (b) Discuss principle of operation of an ionization chamber and Geiger Muller counter.

**Turn over**



(Pages : 2)

Unit III

IV. (a) Explain working principle of a piezoelectric force measuring transducer.

Or

(b) (i) Explain various types of load cells.

(8 marks)

(ii) Discuss principle of a magnetostrictive acceleration transducer.

(7 marks)

Unit IV

V. (a) Discuss working principle of an electrodynamic vibration transducer.

Or

(b) Discuss working principle of digital pH meter.

Time : Three Hours

[4 × 15 = 60 marks]

(c) Define residual voltage in a IVDT.

(d) Draw the characteristics of a photo diode and mention its applications.

(e) Mention advantages of seismic accelerometer.

(f) Why are dummy gauges used? In what way do they affect the output of a strain gauge bridge.

(g) Define the term pH.

(h) State principle of a ray bolt viscometer.

(8 × 5 = 40 marks)

Part B

Unit I

II. (a) Explain working principle of a strain gauge. Also derive strain resistivity relation.

Or

(b) Discuss principle of operation of a thermistor. Mention merits and demerits of a thermistor in comparison to a wire wound resistance coil.

Unit II

III. (a) Discuss construction and working of a Linear variable Differential Transformer.

Or

(b) Discuss principle of operation of an ionization chamber and Geiger Muller counter.