D 51620 (Pages 2) Name.....

Reg. No.....

FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2008

AI 04 506—TRANSDUCERS

(2004 Admission)

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*

I. (a) Draw the resistance-temperature characteristics of a thermistor.

(b) Show that a wire wound resistance potentiometer can be used for linear and angular displacements.

(c) Define hall effect coefficient list out factors on which it depends.

(d) What is a scintillation counter ? List its importance in instrumentation.

(e) How acceleration can be measured using magnetostriction phenomenon ?

(f) What are type of load cells ?

(g) State the principle of a rotameter type viscometer.

(h) Gray code is preferred over Binary code is shaft angle encoders. Justify.

(8 × 5 = 40 marks)

Part B

UNIT I

II. (a) State principle of operation of a strain gauge. Derive strain resistive relation.

Or

(b) Explain the working principle of a hot wire anemometer.

UNIT II

III. (a) Describe construction and working of a magnetostrictive transducer. Also obtain input output relationship.

Or

(b) Explain construction and operation of a photo transistor and a photomultiplier. List out their applications.

Turn over

UNIT III

IV. (a) Write short notes on linear digital encoders and Angular digital encoders.

Or

(b) Discuss working principle of a piezoelectric force measuring transducer.

UNIT IV

V. (a) Explain principle of operation of a saybolt viscometer.

Or

(b) Define pH. Explain basic principle involved in pH measurement. Discuss various electrodes used for measuring pH.

(4 × 15 = 60 marks)