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Name:

Reg.No.

FIFTH SEMESTER B.TECH (ENGINEERING) DEGREE EXAMINATION,
DECEMBER 2010

ME/AM 04 506 - METROLOGY AND INSTRUMENTATION

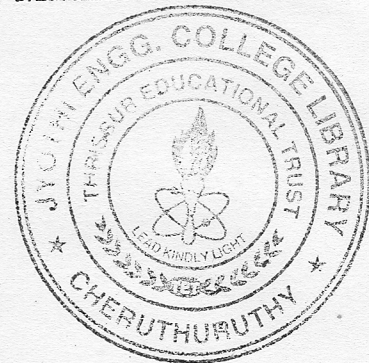
Time: 3 Hours

Maximum: 100 Marks

Answer all questions

Part A

- I. (a) Explain the first order response of an instrumentation.
(b) Explain variable resistance transducers.
(c) Explain the method of selecting slip gauges.
(d) What is calibration? Describe its objectives.
(e) What is an active and passive transducer?
(f) How an auto-collimator is calibrated?
(g) What is zero error? How can you avoid the zero error?
(h) What are the different types of thermistors?



(8 × 5 = 40)

Part B

- II. (a) Explain the resistance wire strain gauges and explain any *one* type of it.
OR
(b) Explain with any *one* type how the low pressure and high pressure are measured.
- III. (a) Why is it undesirable to use readings low on the scale if readings of high accuracy are desired?
OR
(b) What is meant by systematic and random errors ? Describe the factors which would govern the errors?
- IV. (a) How the Tomlinson surface recorder and Talysurf machines work ? What are their relative merits ?
OR
(b) Describe a method for inspecting the involute profile of a spur gear tooth.
- V. (a) Explain the constructional details and working principle of magnetic flow meter with neat sketch and also discuss its merits and demerits.
OR
(b) What is pyrometry ? Explain the total radiation pyrometer with neat sketch.

(4 × 15 = 60)
