

M.E. DEGREE EXAMINATIONS: APRIL / MAY 2010

Second Semester

ENERGY ENGINEERING

EEG507: Instrumentation for Thermal Systems

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 2 = 20 Marks)

1. What do you mean by bias?
2. What is sensitivity of measurement?
3. What are the main elements of data acquisition system?
4. What are the advantages of intelligent instruments?
5. What is seebeck effect?
6. What is schlieren flow visualisation?
7. What is shadowgraph?
8. What is kundsens gauge?
9. What is a nephelometer?
10. Briefly explain the Slug type heat flux meter.

PART B (5 x 16 = 80 Marks)

11. a. Explain some static characteristics of instruments.

(OR)

- b. Explain the sources of systematic error

12. a. Explain the general data acquisition system with block diagram.

(OR)

- b. Explain the elements of micro computer that is used in intelligent instruments.

13. a. Explain the working principle of a thermocouple with neat sketches.

(OR)

- b. Explain the working of a McLeod gauge.

14. a. With neat sketch explain the working of a Laser Doppler Anemometer (LDA).

(OR)

b. List the types of interferometers and explain some of them.

15. a. With a neat sketch explain the working principle of gas chromatograph and give its applications.

(OR)

b. Draw the schematic of mass spectrometry and explain the working principle.
