

M.E DEGREE EXAMINATIONS: JUNE/JULY 2013

Second Semester

ENERGY ENGINEERING

EEG507: Instrumentation For Thermal Systems

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1. Give examples of active and passive instruments.
2. Explain difference between accuracy and precision in an instrument.
3. What are the various elements of micro processor?
4. Draw the block diagram of a microcomputer.
5. What are the principles behind temperature measuring devices?
6. List any two advantages of intelligent instruments.
7. What are the factors considered for flow meter applications?
8. List out types of interferometer.
9. What is the function of mass spectrometer?
10. What do you mean by pH measurement?

PART B (5 x 16 = 80 Marks)

11. a) Briefly define and explain all the static characteristics of measuring instruments.

(OR)

- b) (i) Explain the difference between systematic and random errors. What are the typical sources of these two types of errors? (8)
- (ii) What steps can be taken to reduce the effect of modifying input in measurement systems. (8)

12. a) Describe in details about the three essential elements of a micro computer system.

(OR)

- b) Explain about microprocessor based data logger.

13. a) Explain the use of intelligent instruments for temperature and flow measurement.

(OR)

b) Give details about intelligent pressure transducers with neat sketch.

14. a) Explain (i) Shadow graph techniques (ii) Interferometer.

(OR)

b) Give details about laser Doppler anemometer.

15. a) Write in details about measurement of pH value.

(OR)

b) Explain various types of gas analyzers.
