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Total Number of Pages : 02

B.Tech.
PEEI5403

8th Semester Regular / Back Examination 2017-18

INDUSTRIAL INSTRUMENTATION

BRANCH : AEIE, CHEM, CSE, ECE, EEE, EIE,
ELECTRICAL, ENV, ETC, IEE, IT, ITE, METTA, MINERAL, MME

Time : 3 Hours

Max Marks : 70

Q.CODE : C114

Answer Question No.1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

Q1 Answer the following questions : **(2 x 10)**

- a) Distinguish between zero drift and span drift.
- b) How are the hazardous locations determined? What are the different zones classified on the basis?
- c) Define the Dew point and humidity.
- d) What are the swelling and shrinkage phenomena of boiler?
- e) How thermal conductivity of a pure gas varies with temperature?
- f) The hydrogen ion content in water goes from 0.15 g/L to 0.0025 g/L. How much does the PH change?
- g) How the channel capacity and channel bandwidth is related?
- h) What do you mean by order of measuring system? Write the parameters in second order system.
- i) State with examples of necessity of moisture measurement in liquids.
- j) What are the functions of instrumentation system in power plant?

Q2 a) With suitable diagram briefly explain the principle of operation of any one gas analyzer. **(5)**

b) Describe the measurement of relative humidity. **(5)**

Q3 a) Describe the functions of an economizer and super heater. **(5)**

b) Why modulation is essential in Telemetry? **(5)**

Q4 a) Explain TDM and FDM in measurement system. **(5)**

b) Describe the basic principle of PH measurement. What is the role of Reference Electrode? Describe the construction of reference and measuring cell. **(5)**

Q5 Distinguish the processes between evaporation and drying. Explain the importance of measurement and control of density, conductivity and differential pressure in evaporators. **(10)**

