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Question Paper Code: 34602

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Fourth Semester

Instrumentation and Control Engineering

01UIC402 - INDUSTRIAL INSTRUMENTATION - I

(Common to Electronics and Instrumentation Engineering)

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Point out the range, accuracy and resolution in hydraulic load cell.
2. Write the formula for determining the actual speed in a stroboscope.
3. Define Piezo-electric effect.
4. Define density and what are its units?
5. What is calibration?
6. What is the function of a dead weight tester?
7. How barometric error can be minimized in filled system thermometer?
8. What is triple point of water?
9. Define first law of thermocouple.
10. How the calibration is adjusted in optical pyrometer?

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Explain the working principle of pneumatic load cell. (8)
(ii) Elucidate the operation of AC tachogenerators with neat sketch. (8)

Or

(b) Describe in detail about magneto elastic load cell with neat diagram. (16)

12. (a) (i) Explain the construction and working of variable reluctance type accelerometer. (8)

(ii) What is vibration pickup? How it is calibrated? (8)

Or

(b) Explain the detail about LVDT and Strain gauge accelerometer. Give its merit and demerits. (16)

13. (a) With neat diagram, illustrate the operation of capacitive type pressure gauge. (16)

Or

(b) With neat sketch explain the principle of operation of McLeod gauge and dead weight tester. (16)

14. (a) (i) Write short notes on secondary fixed points thermometers. (8)

(ii) Explain the working of 3 lead and 4 lead RTDs. (8)

Or

(b) Explain in detail about the operations of bimetallic thermometer. (16)

15. (a) Describe in detail about cold junction compensation techniques with neat diagram. (16)

Or

(b) (i) List any five advantages and disadvantages of thermocouple. (8)

(ii) Explain the operation of fiber optic temperature measurement. (8)