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Question Paper Code: 31642

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

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. What is load cell and give the type of it?
2. Write the formula for determining the actual speed in a stroboscope.
3. Define Piezo-electric effect.
4. Write the natural frequency equation for vibration.
5. Mention the different units of pressure.
6. What is the function of a dead weight tester?
7. List the applications of RTD.
8. What is thin Film RTD?
9. Define first law of thermocouple.
10. State peltier effect.

PART - B (5 x 16 = 80 Marks)

11. (a) Elucidate the operation of AC tacho generators with neat sketch.

(16)

Or

- (b) Describe in detail about magneto elastic load cell with neat diagram. (16)
12. (a) Describe the working of piezo electric type accelerometer with neat diagram. (16)

Or

- (b) Explain the working principle and construction of pressure head type densitometer. (16)
13. (a) With neat diagram, illustrate the operation of capacitive type pressure gauge. (16)

Or

- (b) Illustrate the operation of elastic element with LVDT based pressure measurement. (16)
14. (a) Elaborate the different types of sources of errors in filled in system and explain the compensation technique with relevant sketches. (16)

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) Explain the operation of fiber optic temperature measurement. (16)
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