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**Question Paper Code : 21420**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Fourth Semester

Electronics and Instrumentation Engineering

EI 2251/EI 41/EI 1251/10133 EI 402/080300009 — INDUSTRIAL  
INSTRUMENTATION — I

(Common to Instrumentation and Control Engineering)

(Regulation 2008/2010)

(Common to PTEI 2251 Industrial Instrumentation — I for B.E. (Part Time)  
Electronics and Instrumentation Engineering — Third Semester —  
Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention the different types of load cell.
2. What are the merits of stroboscope?
3. What are the disadvantages of LVDT?
4. What are the applications of bridge type gas densitometer?
5. Define gauge factor.
6. What are the demerits of dead weight tester?
7. Draw the V-I characteristics of thermistor.
8. What are the advantages of RTD?
9. What is thermopile?
10. What is the need for cold junction compensation?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain any one type of load cell with a relevant sketch. (8)  
(ii) Describe any one type of torque measurement with a neat sketch. (8)

Or

- (b) Discuss the DC and AC tachogenerator with relevant diagram and mention the merits and demerits. (16)

12. (a) Explain the piezo electric type accelerometer in detail and mentions the application with diagram. (16)

Or

- (b) Explain the following with sketch.

(i) Float type densitometer (8)

(ii) Bridgman type gas densitometer (8)

13. (a) Describe the principle and construction of LVDT with a neat sketch and mention the characteristics, merits and application. (16)

Or

- (b) Explain the pressure measurement using the following;

(i) Bourdon tube (6)

(ii) Bellows (5)

(iii) Diaphragm (5)

14. (a) (i) What is calibration? Explain how thermometer should be calibrated. (8)

(ii) Explain any one type of RTD with a sketch. (8)

Or

- (b) Describe the different types of thermistor with sketch and explain merits and demerits with application. (16)

15. (a) (i) Explain the laws of thermocouple. (4)

(ii) Describe any two type of (cold junction). (12)

Or

- (b) Write short notes on

(i) Total radiation pyrometer (8)

(ii) Optical pyrometer. (8)