

L1B
10/12/13 AN

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 31420

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 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. How can an expanding fluid create a pressure?
2. Mention the advantages of stroboscope.
3. Mention the demerits of LVDT.
4. Write the applications of accelerometer.
5. Explain the principle of load cell.
6. List out the different types of manometer.
7. Explain the laws of thermocouple.
8. List out the error in filled in system thermometer.
9. Mention the disadvantages of thermistor.
10. What is thermopile?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the construction and principle of magneto elastic and magneto elastic and piezo electric load cell with relevant diagram. (16)

Or

- (b) Explain the following with necessary diagram
(i) Stroboscope
(ii) Ac tachogenerator (16)

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

Or

- (b) Describe the following in detail
(i) Bridge type gas densitometer
(ii) Float type densitometer. (16)

13. (a) Discuss the method of pressure measurement using
(i) Bourdon tube
(ii) Capacitive type
(iii) Bellows with neat diagrams. (16)

Or

- (b) Explain the measurement of vacuum using
(i) McLeod gauge
(ii) Ionization gauge with sketch. (16)

14. (a) Describe the different types of sources of error in filled in system and explain the compensation technique. (16)

Or

- (b) Elaborate the temperature measurement using
(i) Bimetallic thermometer
(ii) RTD
with necessary sketch. (16)

15. (a) Describe the principle and working of
(i) Optical pyrometer
(ii) Two colour radiation pyrometer with sketch. (16)

Or

- (b) (i) Discuss the temperature measurement using fibre optic. (8)
(ii) Explain the need for cold junction compensation technique with neat sketch. (8)