

Reg. No. :

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

**Question Paper Code: 31462**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2016

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. Write the principle of stroboscope.
2. Define load cell.
3. What is API scale?
4. What are the methods of vibration measurement?
5. Define static pressure.
6. What are the errors present in manometer?
7. What is the purpose of protecting sheaths in a thermocouple?
8. What are three electrical methods of temperature measurement?
9. What is optical pyrometer?
10. Distinguish between RTD and thermocouple.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Explain about drag-cup type tachometer. (8)  
(ii) Explain any two types of speed measurement. (8)

Or

- (b) (i) Briefly the construction and working of magnet elastic load cell. (8)  
(ii) Write in detail strain gauge torsion meter. (8)
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) (i) Explain in detail about float type densitometer. (8)  
(ii) Write the principle operation of ultrasonic densitometer. (8)
13. (a) Discuss about different types of manometer. (16)

Or

- (b) With neat sketch explain the principle of operation of McLeod gauge and dead weight tester. (16)
14. (a) Describe the construction and working of 3 wire and 4 wire RTD. (16)

Or

- (b) Explain about different types of filled-in system thermometer. (16)
15. (a) (i) Explain about the laws of thermocouple. (8)  
(ii) What is thermocouple? Explain about series and parallel connections of thermocouple with diagram. (8)

Or

- (b) Discuss the working principle, construction and operation of total radiation pyrometer with advantage and disadvantage. (16)