

G 745

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2014

Seventh Semester

Branch : Applied Electronics and Instrumentation Engineering

AI 010 705/EI 010 705/IC 010 705—INDUSTRIAL INSTRUMENTATION—II (AI, EI, IC)

(Improvement/Supplementary—2010 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer all questions.
Each question carries 3 marks.*

1. Explain Nutating disc flow meter.
2. What is a purge flow regulator ?
3. Explain the calibration methods of level detectors.
4. Explain the need for pH measurement.
5. Define thermal conductivity.



(5 × 3 = 15 marks)

Part B

*Answer all questions.
Each question carries 5 marks.*

6. Explain the square root relationship of flow meters.
7. Explain hot-wire anemometer.
8. Write short note on microwave level switches.
9. Explain Dry bulb and Wet bulb method of humidity measurement.
10. Explain Laser based thickness gauge.

(5 × 5 = 25 marks)

Part C

*Answer all questions.
Each full question carries 12 marks.*

11. With the help of sketches, explain :
 - (a) Quantity flow meters ; and
 - (b) Reciprocating Piston flow meters.

(2 × 6 = 12 marks)

Or

Turn over

12. With the help of sketches explain variable head flow meters for compressible and incompressible fluids.

(12 marks)

13. Explain with sketches :

(a) Turbine flow meters.

(b) Target flow meters.

(2 × 6 = 12 marks)

Or

14. With the help of sketches, explain :

(a) Ultrasonic flow meters.

(b) Vortex flow meters.

(2 × 6 = 12 marks)

15. Explain *three* direct method of liquid level measurement in detail.

(12 marks)

Or

16. Explain Resistance, Capacitance and Nuclear radiation type level sensors in detail.

(3 × 4 = 12 marks)

17. Write a note on smart sensors.

(12 marks)

Or

18. Explain :

(a) Hot-wire electrode type hygrometer.

(b) Electrolysis type hygrometer.

(2 × 6 = 12 marks)

19. Explain Inductive and Capacitive type thickness measurement technique in detail.

(2 × 6 = 12 marks)

Or

20. Explain the thermal conductivity measurement of solids, liquids and gases.

(12 marks)

[5 × 12 = 60 marks]

