F 3362 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Seventh Semester

Branch : Applied Electronics and Instrumentation Engineering / Electronics and Instrumentation / Instrumentation and Control Engineering

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

[New Scheme—2010 Admission onwards—Regular/Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

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

1. Explain the working principles of Pitot tube.
2. What are the differences between DC and AC excitations ?
3. Give the classification of liquid level detectors.
4. Draw the block diagram of smart sensors.
5. Explain contact type thickness gauge.

(5 × 3 = 15 marks)

Part B

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

6. Explain Radiation type mass flow meter.
7. What is Laser Doppler anemometer (LDA) ? Explain.
8. It is required to measure the level of milk powder during Production. Explain a suitable level measurement technique.
9. What is the working Principle of Capillary viscometer ?
10. Explain capacitive thickness measurement method.

(5 × 5 = 25 marks)

Turn over

Part C

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

11. With sketches Explain :

    (a) Flow nozzle.

    (b) Orifice plate ; and

    (c) Dall tube.

(3 × 4 = 12 marks)

Or

12. Explain various mass flow meters used in Industry. (12 marks)

13. Explain any *two* types of solid flow measurement in detail. (12 marks)

Or

14. Explain the various factors to be Considered for flow meter selection. (12 marks)

15. Explain : (a) Hydrostatic pressure type level measurement techniques (b) Laser level sensors with sketches.

(3 × 4 = 12 marks)

Or

16. Explain float level switches, Rope method and displaces and torque tube method.

(3 × 4 = 12 marks)

17. Why it is necessary to measure pH in Industry ? Explain Glass and Calomel electrode with sketches.

(12 marks)

Or

18. Explain Saybolt and rotameter type visometers with sketches. (2 × 6 = 12 marks)

19. (a) How microphone is used for sound measurement. (6 marks)

    (b) Explain length measurement using laser. (6 marks)

Or

20. Explain any *three* types of thickness measurement in detail. (12 marks)

[5 × 12 = 60 marks]