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Question Paper Code: 35601

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2021

Fifth Semester

Instrumentation and Control Engineering

01UIC501 - INDUSTRIAL INSTRUMENTATION - II

(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. State the Bernoulli's equation.
2. Mention the different types of orifice plate.
3. Summarize the application of target flow meters.
4. State the principle of a nutating disc.
5. Name three types of rate of flow meters.
6. What is a swirl meter?
7. Classify the steps involved in serving of sight glasses in level measuring instruments.
8. Draw the tilt switch arrangement for measurement of level for liquid and solid.
9. What is Dew cell?
10. Define fluidity and relative humidity.

PART - B (5 x 16 = 80 Marks)

11. (a) Describe with neat sketches the principle of operation of an (i) an Orifice plate and (ii) Venturi tube as used in fluid flow measurement. (16)

Or

- (b) Explain the flow Nozzle and Pitot tube with neat sketch. (16)

12. (a) Explain the principle, working, features and advantages of Coriolis mass flow meter in detail. (16)

Or

- (b) Describe with neat sketches, the construction and working of a rotameter and nutating disc. (16)

13. (a) Explain with neat sketches the construction and working of a electromagnetic flow meters. (16)

Or

- (b) Describe with neat sketches the principle of operation of (i) Ultrasonic flow meter and (ii) Laser Doppler anemometer. (16)

14. (a) Discuss the construction, working, merits and demerits of capacitance level indicator and radiation level indicator. (16)

Or

- (b) Identify the level detector which works on the principle of Archimedes. List the various types of detectors and explain any one in details. (16)

15. (a) Write short notes on float type and optical type consistency meter. (16)

Or

- (b) (i) Discuss the different methods of measurement of moisture in solids. (2)

- (ii) Demonstrate any two methods of measurement of moisture in solids. (14)