Reg. No. : | | | | | | | | | | |

Question Paper Code: 35601

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

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. Specify the purpose of using annubar in flow measurement?
3. Summarize the application of target flow meters.
4. State the principle of a nutating disc.
5. Show the possible errors in flow meters.
6. What is a swirl meter?
7. Why displacer type level gauges are considered superior to float type gauges?
8. Difference between differential pressure method and hydra step method.
9. Formulate the units of humidity information.
10. Why should the water supply for psychrometers be at ambient temperature?

PART - B (5 x 16 = 80 Marks)

11. (a) Describe with neat sketch the construction and working of a variable head type flow meter. Also, derive an expression for incompressible fluids. (16)

Or

(b) 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)

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

Or

(b) Summarize the guidelines for the selection of flow meter. (16)

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

Or

(b) Describe how ultrasonic sensors provide a continuous level measurement? (16)

15. (a) Write short notes on dew point and explain in detail about the commercial dew point meter. (16)

Or

(b) Explain briefly about moisture measurement of various substances with neat diagram. (16)