

Reg. No.

| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

Question Paper Code : 51533

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

Fifth Semester

Electronics and Instrumentation Engineering

EI 2303/EI 53/10133 EI 506 – INDUSTRIAL INSTRUMENTATION – II

(Common to Instrumentation and Control Engineering)

(Regulations 2008/2010)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Define Reynolds number.
2. What are the advantages of pitot tube ?
3. What is Coriolis effect ?
4. State the principle of Nutating disc.
5. Enumerate the applications of electromagnetic flow meter.
6. Write down the types of ultrasonic flow meters.
7. How are direct and indirect methods of level measurement done ?
8. In an air bubble gage, the bubble tube is immersed in water upto 400 mm below the water surface. If the air pressure is to be measured by
 - (a) a U tube mercury manometer what will be the mercury head height in mm and
 - (b) a bourdon gage what pressure will it read in N/m^2 ?
9. Why is viscosity measurement important for industrial processes ?
10. Define relative humidity.

PART – B (5 × 16 = 80 Marks)

11. (a) Write short notes on :
- (i) Pitot tube (8)
 - (ii) Dall tube. (8)

OR

- (b) With a neat sketch explain the construction and working of orifice meter.

12. (a) Describe with neat sketch, the construction and working of inferential meter and reciprocating pumps. Also state its advantages and disadvantages.

OR

- (b) Discuss the working principle theory and installation of thermal type mass flow meters.

13. (a) (i) Explain the working of Doppler shift ultrasonic flow meter. (8)
- (ii) How does laser Doppler anemometer work for the measurement of instantaneous velocity of liquids ? (8)

OR

- (b) (i) Explain the working of different types of open channel flow meters. (10)
- (ii) Discuss the guidelines for the selection of flow meters. (6)

14. (a) Explain the level measurements using bubbler system in detail. (16)

OR

- (b) With a neat diagram explain level measurements by electrical methods.

15. (a) Describe the different methods used for measurement of Humidity. (16)

OR

- (b) Describe the different methods used for Moisture measurement. (16)