

B.E DEGREE EXAMINATIONS: APRIL/MAY 2011

Sixth Semester

ELECTRONICS AND INSTRUMENTATION ENGINEERING

U07EI602: Industrial Instrumentation – II

Time: Three Hours

Maximum Marks: 100

Answer All Questions:

PART A (10 x 1 = 10 Marks)

1. Material that is sensitive to humidity
A) Aluminium B) Carbon C) Wood D) Tin
2. The Electrical quantity like _____ of a material changes with change in moisture content
A) Inductance B) Resistance C) Dielectric constant D) Voltage
3. Flow nozzle is a variation of
A) Venturi tube B) Orifice tube C) Pitot tube D) Dall tube
4. Pitot tube is mainly used for measurement of
A) Fluid Velocity B) Fluid Viscosity C) Fluid pressure D) Fluid Density
5. The impeller of a turbine mass flowmeter is rotated at constant speed by
A) Stepper motor B) Asynchronous motor C) Synchronous motor D) Servo motor
6. Coriolis flowmeter are used to measure the mass flow rate of
A) Slurries B) Large flow C) Solid body D) None
7. The Electrodes of Electromagnetic flowmeter are made of
A) Copper B) Iron C) Stainless steel D) Aluminium
8. Hot wire anemometer is used for measuring the heating of element by
A) Velocity change B) Pressure change C) Dimension change D) none
9. Capacitive method of liquid level measurement is most suitable for
A) Conducting liquid B) Non-conducting liquid C) Non-corrosive liquid D) None
10. The float is generally made of material
A) Copper B) Aluminium C) Glass D) Wood

PART B (10 x 2 = 20 Marks)

11. Define dew point.
12. List the commonly used materials for hygroscopic coating.
13. Define Absolute humidity and relative humidity.

14. Define Coriolis Effect.
15. Give the classes of positive displacement type flowmeters
16. Name any two flowmeters to measure mass flow rate.
17. Write the principle of a target flowmeter.
18. Explain the principle of anemometer.
19. Write the principle used in ultrasonic method of level measurement.
20. What is the disadvantage of the diaphragm box type level gauge?

PART C (5 x 14 = 70 Marks)

21. (a) Explain with neat sketch the operation of Dry and Wet bulb Psychrometer.

(OR)

(b) (i) Describe a method of measuring the moisture content of granular materials. (7)

(ii) Explain with neat sketch the working of commercial type densitometer. (7)

22. (a) Write short notes on: Flow nozzle and Pitot tube with necessary equations.

(OR)

(b) Discuss the installation and tapings in orifice flow meter

23. (a) Explain the principle of operation of the turbine flowmeter with neat sketch.

(OR)

(b) Explain with necessary equations and sketch the principle of operation of the rotameter.

24. (a) Explain the principle of the Electromagnetic flowmeter.

(OR)

(b) Write short notes on: Ultrasonic flowmeters and Vortex Flowmeters

25. (a) Discuss the principle of operation of various schemes of hydrostatic type level measuring system.

(OR)

(b) (i) Explain how boiler drum level is measured using hydra step system. (7)

(ii) How liquid level is measured using float and displacer type sensor. (7)
