



KERALA AGRICULTURAL UNIVERSITY
B.Tech. (Food Engg.) 2019 Admission
VI Semester Final Examination – June 2022

Elen.3202

Instrumentation and Process Control (2+1)

Marks: 50
Time: 2 hours

- I Fill in the blanks** (10x1=10)
1. The negative lead of the thermocouple is always colored _____.
 2. A thermowell is _____
 3. _____ device for detecting and measuring small amount thermal energy
 4. In new spectrometers each ion hits a _____.
 5. Normal force acting per unit cross sectional area is called _____.
- State True or False**
6. Hair hygrometer is used for continuous measurement of moisture in paper.
 7. Differential manometer gives the pressure reading with respect to atmospheric pressure
 8. The name of the curve between relative humidity and moisture content is equilibrium moisture curve.
 9. Atomic absorption spectroscopy is also called as Absorption Flame Photometry.
 10. Diaphragm element is used for level to pressure conversion.
- II Write short notes on ANY FIVE of the following** (5x2=10)
1. Define pH of a solution. What is the hydrogen ion concentration of a solution if the pH of the solution is 5.0?
 2. What is seeback effect?
 3. Differentiate null and deflection type instruments.
 4. What are the types of detectors in mass spectrometer?
 5. List the mechanical properties to be considered while selecting a thermal well.
 6. How the dip sticks are used for level measurement?
 7. Write the use of Psychometric charts
- III Answer ANY FIVE of the following** (5x4=20)
1. With neat diagram, explain construction and operation of U-Tube Differential manometer.
 2. Define the laws of radiation:
(i) Stefan – Boltzmann law
(ii) Planck's radiation law
 3. How the pressure / level is measured in open vessel?
 4. Explain how The Brown Instrument Company measures the moisture in Paper.
 5. What is Process analysis?
 6. Explain Industrial Resistance – thermometer bulbs.
 7. With neat sketch, explain Radiation pyrometers.
- IV Write an essay on ANY ONE of the following** (1x10=10)
1. Describe the constructional details and working of a Thermocouple with neat sketch.
 2. Explain with a schematic diagram the function of Resistance type Pressure transducer.
