KERALA AGRICULTURAL UNIVERSITY

B.Tech (Food . Engg) Degree Programme 2013 Admission

VI th Semester Final Examination- June - 2016

Cat. No: Elen. 3202 **Marks: 50.00**

Title: Instrumentation and Process Control (2+1) **Time: 2 hours**

I Fill up the Blanks **(10 x 1 =10)**

1. Sight glass method is one of the familiar method for measuring _____
2. _____ is a way of expressing the hydrogen ion concentration in water.
3. An ideal thermal radiator is known as _____ and such a body can completely absorb any radiation falling on it.
4. The dynamic range of magnetic tape recorder is greater than _____ dB.
5. Type B thermocouple is used in the temperature range_____
6. For temperature measurement above 2500K _____ are usually used.
7. _____ effects states that there is always a potential difference between two dissimilar metals in contact.
8. _____ is used for measuring very low pressure from 10 mbar down to 10^{-3} mbar.
9. In emission spectroscopy the maximum range of arc temperature is _____.
10. _____ effect relates the absorption and evolution of heat at the thermocouple junction.

II Write short notes ANY FIVE **(5 x 2 =10)**

1. Explain any method for measuring vacuum pressure.
2. Explain briefly about types of thermocouples.
3. Explain Radiation temperature measurement. Give its advantages.
4. Write short notes on mass spectroscopy.
5. Explain the hygrometer method for measuring moisture in gases.
6. Discuss the features of Control centre.
7. Explain the analysis of gases by thermal conductivity.

III. Explain ANY FIVE of the following **(5 x 4 =20)**

1. Explain in detail about absorption spectroscopy and emission spectroscopy.
2. Discuss the method for solid analysis by X-ray diffraction method.
3. Describe the various types of resistance thermometers.
4. Explain the detail about a method for measuring pH value.
5. Explain the constructional features of a thermocouple and give its advantages and disadvantages.
6. Discuss the functional elements of instrumentation system in modern plant.
7. Give the factors influencing the response of temperature sensing device.

IV. Write essay on ANY ONE **(1 x 10=10)**

1. Explain in detail about the liquid level measurements.
2. Explain in detail about analysis of gas.

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