

KERALA AGRICULTURAL UNIVERSITY

B.Tech (Agrl.Engg) Degree programme 2015 Admission

IInd Semester Final Examination- June/July-2016

Cat. No: Elec.1201

Marks: 50

Title: Electronics & Instrumentation (2+0)

Time: 2 hours

Answer all questions

(10 x 1.0 = 10)

1. Modes of operation in bipolar junction transistors are _____ and _____
2. Gauge factor is defined as the ratio of _____ to _____
3. Shockley diode is called as _____
4. Threshold voltage for silicon is _____
5. Rectifier efficiency of a full wave rectifier is _____

Choose the correct answer

6. Filter that uses resistor are called as
 - a) Active filter
 - b) Passive filter
 - c) Low pass filter
 - d) None
7. Cut in voltage for germanium is
 - a) 0.7 V
 - b) 0.3 V
 - c) 0.6 V
 - d) 0.1 V
8. Number of pins is an operational amplifier IC 741 is
 - a) 8
 - b) 6
 - c) 4
 - d) None
9. Ratio of the differential voltage gain to the common mode voltage gain is
 - a) CMRR
 - b) Gain
 - c) Slew rate
 - d) None
10. Process of adding impurities to a semiconductor is called as
 - a) Doping
 - b) Dieing
 - c) Insulating
 - d) None

Answer any FIVE questions only

(5 x 2 =10)

1. Explain the input characteristics of PNP transistor.
2. Explain summing amplifier with a diagram and its main application
3. Define load cell and its application
4. Explain the basic methods of flow measurement
5. Explain the Barkhausen criterion of oscillation.
6. Explain the diode circuits for OR and AND
7. What is a tachogenerator and where it is used.

Answer any FIVE questions only

(5 x 4 =20)

1. Define filters and explain types of filter
2. Explain the characteristics of a Ideal operational amplifier.
3. Explain the functioning of strain gauge transducer.
4. Explain the pressure measurement techniques.
5. Differentiate between RFD, thermocouple and thermister.
6. What is LVDT and explain its working principle.
7. What is an oscillator and explain the functioning of a colpitts oscillator.

Answer any ONE question only

(1 x 10.0 =10)

1. a. Explain the errors in measuring instruments.
b. Explain the types of multi vibrator.
2. a. Explain the generalized instrumentation system along with classification of instruments.
b. Explain the CB and CE configurations of transistors.