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KERALA AGRICULTURAL UNIVERSITY

B.Tech (Agrl.Engg) 2014 Admission
IInd Semester Final Examination-June/July -2015

Cat. No: Elec.1201

Marks: 50.00

Title: Electronics and Instrumentation (2+0)

Time: 2 hours

I Fill up the blanks

(10 x 1=10)

1. A junction transistor consists of _____ elements
2. Modes of operation in bipolar junction transistors are _____ and _____
3. Silicon controlled rectifier is used for _____
4. Emitter base junction in PN junction is formed by _____
5. Gauge factor is defined as the ratio of _____ to _____

Choose the correct answer

6. Filter that uses operation amplifiers are called as
a) Active filter b) Passive filter c) Low pass filter d) None
7. Cut in or threshold voltage for Silicon is
a) 0.7 V b) 0.3 V c) 0.6 V d) 0.1 V
8. Instrument are classified as
a) Absolute and secondary b) Active and passive c) Single and dual 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. A device that converts physical variable into equal electrical signal is called as
a) Transducer b) Transformer c) Transistor d) None

II Write short notes on any FIVE questions

(5 x 2=10)

1. Illustrate circuits for OR and AND gates
2. Explain barkhausen criterion of oscillation
3. Explain the types of transducers
4. Define gauge factor and mention different types of strain gauges
5. List the errors in measuring instruments
6. Define thermocouple and list its types
7. What do you mean by instrumentation amplifier

III Write short note on any FIVE questions

(5 x 4=20)

1. Explain the generalized measurement system with a block diagram
2. Explain the various transducers used for temperature measurement
3. What is LVDT and explain its working principle and applications
4. Explain the working principle of a half wave and full wave rectifiers

5. Explain the working principle of a Hartley and colpitts oscillators (

6. Define a filter and explain various types of filters

7. What do you mean by regulated power supply and explain the zener diode voltage regulator

IV Write an essay on any ONE

(1 x 10=10)

1. Explain the different configurations of PNP junction transistor

2. Explain the applications of operational amplifier
