



**KERALA AGRICULTURAL UNIVERSITY**

**B.Tech.(Agri. Engg) 2016 Admission**

**IV Semester Final Examination- July 2018**

**Sacs.2213**

**Applied Electronics and Instrumentation (2+1)**

**Marks: 50**

**Time:2 hours**

**1 Fill in the blanks. (10x1=10)**

- 1 The point of intersection of dc load line and ac load line is called ..... point.
- 2 A crystal diode utilizes .....characteristics for rectification.
- 3 Static error of measuring instrument is the numerical difference between ..... and its value as obtained by the measurement.
- 4 In an electronic ohm meter, an operational amplifier is used as a .....
- 5 The process of raising the strength of weak signal without changing in its general shape is known as .....
- 6 Resistance strain gauge is also known as .....gauges.
- 7 When potentiometer is used for the measurement of unknown source, the power consumed in the circuit of the unknown source under null condition is.....
- 8 The phase difference between the input and output voltages of a transistor connected in common collector arrangement is .....
- 9 In an operational amplifier common mode voltage gain is ..... than differential voltage gain.
- 10 When negative voltage feedback is applied to an amplifier, its bandwidth is .....

**II Write short notes/answers etc on ANY FIVE (5x2=10)**

- 1 Ideal Operational Amplifier characteristics
- 2 Barkhausen Criterion or Conditions for Oscillation.
- 3 Force measurement using load cells
- 4 Elastic pressure transducer
- 5 Bimetallic thermometer
- 6 Half adder
- 7 Working principle of Hartley oscillator.

**P.T.O**

**III Answer any FIVE of the following. (5x4=20)**

- 1 Explain principle and working of LED.
- 2 What are the different types of voltage regulator? Explain Zener diode as voltage regulator.
- 3 Explain full wave bridge rectifier circuit with neat diagram. Solve efficiency equation of it .
- 4 What are different method of biasing of the transistor .Explain Fixed Base Biasing a Transistor
- 5 Draw neat diagram of LVDT as a displacement transducer explain working of it state advantage, disadvantage of it.
- 6 Operational amplifier as an integrator.
- 7 Explain with neat diagram - principle, construction and working of thermocouple.

**IV Answer any ONE of the following (1x10=10)**

- 1 Explain the principle of capacitive transducer. Explain how it is used for the pressure measurement. State advantages, disadvantages and applications of it.
- 2 How potential barrier is formed in the P-N junction diode explain it in detail with neat diagram. Draw I-V characteristics of P-N junction with neat diagram. Define breakdown voltage, knee voltage.

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