



KERALA AGRICULTURAL UNIVERSITY
B.Tech. (Food Technology) 2021 Admission
II Semester Final Examination - September 2022

Beas.1206

Basic Electronics Engineering (2+1)

Marks: 50
Time: 2 hours

I. Fill in the blanks

(10x1=10)

1. The uncovered charge in the p side of a p n junction is.....
2. By adding group V elements to a Si crystal, type of semiconductor is formed.
3. The α and β of a transistor is related as, $\alpha = \dots\dots\dots$
4. For an ideal OPAMP, slew rate =
5. circuits are used to generate waveforms without the application of an external input signal.
6. The Boolean expression $Y = \overline{AB}$ holds for agate.
7. circuits are used to insert a dc component into a signal.
8. In Boolean algebra, $1 + 1 = \dots\dots\dots$
9. Strain guage converts mechanical displacement into a change of
10. LVDT translates linear motion into signal.

II. Write short notes on ANY FIVE of the following

(5x2=10)

1. Explain the effect of temperature on the barrier voltage of a p-n junction.
2. Draw the circuit of a half wave rectifier circuit.
3. What is a voltage multiplier circuit?
4. Explain the working of a comparator circuit.
5. Explain the need for biasing circuit.
6. Briefly discuss the functional elements of a measurement system.
7. What are the requirements for the resistance materials used in resistance thermometer?

III. Answer ANY FIVE of the following

(5x4=20)

1. Compare zener breakdown and avalanche breakdown.
2. Explain the combined forward and reverse VI characteristics of a diode.
3. Explain the working of a positive clipper with circuit diagram and waveforms.
4. What is the significance of DC load line and Q point?
5. With neat circuit diagram, explain the working of RC phase shift oscillator.
6. Explain the working of a differentiator circuit using OPAMP.
7. Explain how Pirani guage is employed for pressure measurement.

IV. Write an essay on ANY ONE of the following

(1x10=10)

1. With the help of necessary figures, explain the working of a bridge rectifier. What is its conversion efficiency?
2. Explain the working of total radiation pyrometer.
