2019

3rd Semester Examination

ELECTRONICS (Honours)

Paper - C5P

(Semi Conductor Device Lab)

Full Marks : 20 Time : 3 Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Answer any one questions selected from lucky draw questions

1. Study the forward current voltage characteristics of a P–N junction diode. Draw a graph and calculate the cut-in, voltage, material constant and dynamic resistance from your plot. (Th + Ckt–3, Data Recording—7, drawing of graph—2, Calculations–3)

2. Study the output characteristics of a Bipolar junction Transistor (BJT) operated under common emitter mode for different values of base current. Calculate common

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emitter current gain from your Riot. (Th + Ckt—3, data recording—8, plotting of graph—2, Calculations—2)

3. Study the current voltage characteristics of a SCR. (Th + Ckt—3, data recording_8, Plotting and Calculations—4)

4. Study the variation of drain current over drain voltage for various gate voltages. Draw a suitable graph and indicate various regions. (Th + Ckt—3, data recording—8, graph and calculation—4)

5. Study the output characteristics of a BJT operated in common base mode and plot your results. Calculate common base current gain and from your plot. (Th+Ckt—3, data recording—8, Plotting of graph and calculation—4)

6. Study the current voltage characteristics of a P-N Junction diode under reverse bias. Plot your data on a graph paper and final out the break down voltage and break down current. (Th + Ckt—3, data recording—8, plotting of graph and calculations—4)

7. Study the current voltage characteristics of an Unijunction Transistor and draw its current voltage curve. Plot your result on a graph paper and indicate

various regions. (Th + Ckt—3, data recording—8, plotting of graph and calculations—4)

8. Study the I-V characteristics of a MOSFET. (Th + Ckt—3, data recording—8, plotting of graph—4)

9. Study the input characteristics of a BJT operated in CE mode. Plot your results on a graph paper. (Th + Ckt—3, data recording—8, plotting graph and calculation—4)

10. Study the Variation of drain current over gate voltage for various drain bias. Plot $\sqrt{Id}$ – Vg and calculate the threshold voltage of the device from the graph. (Th + Ckt—3, data—8, plotting of graph and calculations—4)

Marks Distribution :

Experiment	: 15 Marks
Laboratory Note Book	: 02 Marks
Viva-vose	: 03 Marks
Total	: 20 Marks