UG/2nd Sem/Elec./H/19 (Pr.)

2019

B.Sc.

2nd Semester Examination

ELECTRONICS (Honours)

Paper - C3P

(Applied Physics Lab)

[Practical]

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* question selecting it by a lucky draw.

1. Measure the resistivity of a Si crystal using Four-prove method. Record the results at room temperature and six other temperatures upto 200°C. Plot resistivity of Si with temperature.

   (Th + Ckt - 3, data recording - 8, Plot - 2, accuracy - 2)

2. Determine the value of Boltzman Constant from the study of forward characteristic of given P-N diode. Assume the material constant is equal to unity.

   (Th+Ckt - 3, data recording - 8, plotting - 2, accuracy - 2)

3. Determine the threshold voltage of the given LEDs operating in forward region. Calculate Planck's Constant from the threshold voltage. Perfrom the experiment for LEDs of four colours : Red, Green, Yellod and Blue.

   (Th+Cket - 2, data - 2, accuracy - 1)

4. Write a programme using C / Mat lab / Sci lab to find the lowest energy eigen value for 1-D Schrodinger equation. Execute the programme to verify the result.

   Prog. write - 3, Execution - 10, accuracy - 2)

5. Write a programme using C / Mat lab / Sci lab to plot tunelling probability as a function of barrier width and execute the programme.

6. Write a programme using C / Mat Lab / Sci lab to plot Energy-Band-Diagram Corresponding to at least two different potential profile. Execute the programme.

   (Programme - (2+2), Execution of the Prog. - (4+4), accuracy - 3).

Distribution of Marks :

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