

ASSIGNMENT 3

LIGHT SEMICONDUCTOR INTERACTION

1. Explain Drude model and discuss how it is used for D.C. and A.C. conductivity measurement.
2. Define following terms with respect to Light-semiconductor devices.
 - (a) Absorption of radiation.
 - (b) Spontaneous emission
 - (c) Stimulated emission
 - (d) Meta stable state
3. Discuss fermi golden rule.
4. What is the cause and remedy for optical loss in photovoltaic cell?
5. Write a note on exciton.
6. Give details of applications of solar cell .
7. What is radiative and non-radiative transition. Explain in brief the optical joint density of states.
8. Explain photovoltaic effect. With required diagrams discuss construction and working of solar cell.
9. Write short notes on Density of states for photons.
10. Discuss how Drude model is used for Hall measurement and magnetoresistance.