

SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY**ADITYA SILVER OAK INSTITUTE OF TECHNOLOGY****BE - SEMESTER-II • MID SEMESTER-II EXAMINATION – SUMMER 2019****SUBJECT: PHYSICS (3110018) (SOFT BRANCHES - CE/IT/EE)**

DATE: 25-04-2019

TIME: 10:30 am to 12:00 pm

TOTAL MARKS: 40

Instructions: 1.Q. 1 is compulsory.

2. Figures to the right indicate full marks.

3. Assume suitable data if required.

- Q.1 (a) State different means of losses in solar cell and give their remedies. [03]
(b) What are differences between intrinsic and extrinsic semiconductors? [03]
(c) Explain Drude model. [04]
- Q.2 (a) Explain photovoltaic effect with diagram. [06]
(b) Explain Fermi golden rule. [05]
(c) Differentiate between n-type and p-type semiconductors. [04]
- OR**
- Q.2 (a) Derive an expression for concentration of majority charge carriers in n type semiconductor. [06]
(b) Draw and explain energy band diagram for Metal semiconductor junction (Schottky diode). [05]
(c) State Law of Mass Action for extrinsic and intrinsic semiconductors. [04]
- Q.3 (a) Explain with diagram variation of fermi energy level with temperature in n-type and p-type semiconductor. [06]
(b) Explain Joint density of states for photon. [05]
(c) What is the difference between ohmic and Schottky junction? [04]
- OR**
- Q.3 (a) Differentiate between drift and diffusion current. Write expression of current density for both. [06]
(b) Explain absorption, spontaneous and stimulated emission. [05]
(c) Derive an expression for Fermi level in intrinsic semiconductor. [04]
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