DEPARTMENT OF PHYSICS AND NANOTECHNOLOGY

SRM Institute of Science and Technology

18PYB103J – Semiconductor Physics

Assignment: 2 (Module - 2 and 3)

Register No: ___**RA2011026010022**_____

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Year, Branch and Section: _**CSE with specialization in AI and ML; J1; 2020-24**

Date: _____**26.12.2020**_____

Instructions:

Write (Do not type) the answer for the following question in A4 sheet and submit the scanned copy of same in the PDF format in Google Classroom (GCR).

Questions: (10 Mark)

1. Derive an expression for the Fermi energy of intrinsic semiconductor and also explain the variation of Fermi energy with temperature for n type and p type semiconductor.

(Or)

2. Derive an expression for

   (i) Optical joint density of states and (ii) Density of states of photon.