

# *National Institute Of Technology Delhi*

## **Name of the Examination: B. Tech**

MIDSEMESTER MARCH - 2019

Branch : EEE

Semester : IV

Course Name : Electrical Engineering Material

Course Code: EEL-263

Time : 2:00 hours

Maximum Marks: 25

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### **Part A**

**(Answer all questions)**

**[10×1]=10**

- i. Define Peltier effect. Mention one application of it.
- ii. Differentiate between direct band semiconductor and indirect band semiconductor.
- iii. What do you understand by metallurgical grade Si and Electronic grade Si?
- iv. Explain the phenomenon of magnetostriction.
- v. What is the significance of doping?
- vi. Discuss different applications of super conductor.
- vii. What do you mean by cooper pair?
- viii. Explain the anisotropic behaviour of magnetic material.
- ix. Mention some applications of thermal conductivity.
- x. What is Néel Temperature?

### **Part B**

**(Answer all questions)**

**[3×5]=15**

1. Classify different magnetic material and discuss about their applications. [3]
2. Explain the working principle of photovoltaic cell with neat sketch. [3]
3. Discuss about different steps of fabrication technique. [3]
4. Write a short note on  
(a) Single crystal Si manufacturing, or (b) Magnetic storage device. [3]
5. What is the effect of temperature on the susceptibility of different magnetic materials? [3]

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