

No. of Printed Pages : 03

Roll No.

5772

M.Tech. EXAMINATION, May 2019

(Third Semester)

(B. Scheme) (Re-appear)

(MSN)

MSN703

ADVANCED MATERIALS SCIENCE-I

Time : 3 Hours]

[Maximum Marks : 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt any *Five* questions. All questions carry equal marks.

(3-44/8) M-5772

P.T.O.

1. (a) What is Polarization ? Discuss its mechanism and different factors affecting polarization. **10**
- (b) How does a semiconductor behave at 0° K ? **10**
2. Discuss the following material types :
 - (a) Ferroelectric
 - (b) Pyroelectric
 - (c) Piezoelectric. **20**
3. (a) What do you understand by domain theory and ferromagnetic domains ? Explain in detail. **10**
- (b) What is magnetostriction and its mechanisms ? **10**
4. Explain the following :
 - (a) Texture magnetic materials
 - (b) Magnetic anisotropy. **20**

5. What are the orthopedic implants and discuss the materials used for artificial orthopedic implant. **20**
6. Explain in detail :
 - (a) Microfiltration
 - (b) Ferromagnetic separation. **20**
7. Explain the structure to tooth. What do you understand by Dermal and facial prosthesis ? **20**
8. Discuss the process of functionalization of CNT. Describe different types of functionalization. **20**