

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
RAIGAD -402 103

Winter Semester Examination – December - 2019

Branch: Electrical Engineering

Sem.:- III

Subject: Electrical Engineering Materials (BTEEE305A)

Marks: 60

Date:- 19/12/2019

Time:- 3 Hr.

Instructions to the Students

1. Each question carries 12 marks.
2. Attempt any five questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately Assume it and should mention it clearly

(Marks)

- Q.1. a) Explain various point defects in crystal (06)
b) Explain Bragg's law of X-ray diffraction. (06)
- Q.2. a) How do you distinguish between diamagnetic, paramagnetic & ferromagnetic materials (06)
b) What is hysteresis loop? What does it represent? Explain the significance? (06)
- Q.3. a) Explain classical free electron theory. (06)
b) What is superconductivity? Explain various properties of superconductivity? (06)
- Q.4. a) Explain Hall Effect? Derive expression for Hall voltage and Hall coefficient (06)
b) Explain the concept of Fermi level. (06)

P.T.O.

Q.5. a) Explain Dielectric Polarization (06)

b) Derive Clausius-Mosotti relation in Dielectrics. (06)

Q.6. a) Define Nanomaterial. Explain any two characterization techniques of Nanomaterial (06)

b) What is Carbon Nano Tubes? Explain Synthesis of Carbon Nano Tubes & its application (06)
