Roll No. □□□□□□□□□□□□□   Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Agriculture Engineering) (Sem.–1)
ENGINEERING PHYSICS
Subject Code : BTAG-102-22
M.Code : 92760
Date of Examination : 16-01-23

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION - B & C have FOUR questions each.**
3. **Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.**
4. **Select atleast TWO questions from SECTION - B & C.**

SECTION-A

l. **Write short notes on :**   (10×2=20)

   a. Define Curie-Weiss law.

   b. Write the significance of wave function.

   c. What is Stark effect?

   d. What is Superconductivity?

   e. Explain optical pumping.

   f. Define Holography.

   g. Define Para magnetism.

   h. Write difference between metals and insulators.

   i. What is Meissner effect?

   j. Write Laws of illumination.

SECTION-B

2. How many types of magnetism are there? Explain. (8)

3. What is an extrinsic semiconductor? Describe its different types. (8)

4. Discuss possible transitions between two energy levels of an atomic system and deduce the expressions for Einstein Coefficients. (8)

5. Discuss the Langevin theory of paramagnetism. (8)

SECTION-C

6. Which approach is the most important for the understanding of *'band theory of solids'*? (8)

7. Discuss He-Ne laser with energy level diagram. (8)

8. Derive time dependent and time independent Schrodinger wave equation. (8)

9. What is superconductivity? Discuss Type-I and Type-II superconductors. (8)

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.