IILM UNIVERSITY

Assignment No. : 04 (Module 4: Solid State Physics)			
Subject	**Physics**	**Subject Code**	**UBS1008**

SHORT QUESTIONS

1. Briefly explain metals, semiconductors and insulators on the basis of band gap.
2. Write the expression for Fermi Dirac distribution function by explaining different terms.
3. Define the term Fermi energy level.
4. Define superconductivity and transition temperature.
5. What is Meissner effect? Give the experimental verification of Meissner effect.

LONG QUESTIONS

6. Discuss the formation of bands in solids. Differentiate semiconductors, conductor and insulators on the basis of band theory of solids.
7. Find out the probability of occupancy of an energy level by an electron at T=0 if (i) E<EF and(ii) E>EF, where EF is Fermi energy.
8. Define superconductivity. Describe the effects of following on superconducting properties: (i) Magnetic field; (ii) Temperature and (iii) Isotopes.
9. Explain type I and type II superconductors. Also briefly discuss the important property that change during transition.
10. What are high temperature superconductors? Explain.