SATHYABAMA UNIVERSITY
(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E/B.Tech - CSE/IT/ECE/EEE/EIE/E&C/ETC/CHEM
Title of the paper: Applied Physics - II Time: 3 Hours
Semester: II Max. Marks: 80
Sub.Code: ET203A (2002/2003/2004/2005)
Date: 05-12-2006 Session: AN

PART – A (10 x 2 = 20)
Answer ALL the Questions

1. Define Widemann-Franz law.

2. What is the significance of critical temperature and critical magnetic field?

3. Draw energy band diagrams for n-type semiconductor at 0°k and T°k.

4. What is LED?

5. What is magnetic dipole moment?

6. What is the difference between soft and hard magnetic materials?

7. How is the basic lasing action achieved?

8. Write the types of optical fibers.

9. Define Miller indices.

10. What is internal field in dielectric material?

PART – B (5 x 12 = 60)

Answer ALL the Questions

11. (a) Explain Free electron theory.

    (b) Derive the expression for Electrical and Thermal conductivity.

(or)

12. Explain BCS theory. Write the applications of superconductors.

13. Write the expression for intrinsic carrier concentration.

(or)

14. Explain in detail about LCD.

15. Explain dia, para, ferro, antiferro and Ferricmagnetic materials and also explain Hysteresis.

(or)

16. What are magnetic bubbles? How are magnetic bubbles formed and propagated?

17. (a) Explain the construction and working of He-Ne Laser.

    (b) Write the applications of Laser in medical field.

(or)

18. Explain attenuation, distortion and dispersion of light waves in optical fibers.

19. (a) Calculate atomic radius and packing density for SCC, BCC and FCC.

    (b) Calculate the interplaner spacing for (321) plane in a simple cubic lattice where lattice constant is 4.2×10^{-10}m.

(or)

20. Deduce the expression for Clausius-Mossotti relation.