

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act,1956)

Course & Branch :B.E/B.Tech - AERO/CSE/EIE/IT/M&P/MECH

Title of the Paper :Applied Physics – I

Max. Marks :80

Sub. Code :4ET103/5ET103

Time : 3 Hours

Date :10/05/2010

Session :AN

PART - A

(10 x 2 = 20)

Answer ALL the Questions

1. What are the advantages and disadvantages of Forbe's method of determining thermal conductivity of good conductors?
2. Mention the properties of thermal radiation.
3. State the superposition principle.
4. What is the condition for bending of light?
5. Define decibel – the unit of relative intensity.
6. List the methods of detection of ultrasonic.
7. Define the terms gravitational field and potential.
8. What is Poisson's ratio? Give its limits.
9. State the significance of wave function.
10. Give the origin of X-rays.

PART – B

(5 x 12 = 60)

Answer All the Questions

11. Describe Lee's disc method to determine the coefficient of thermal conductivity of a bad conductor.

(or)

12. Distinguish between natural and forced convection . Discuss disappearing filament pyrometer.

13. With theory explain air wedge experiment to find the thickness of a thin wire.

(or)

14. Discuss in detail how plane, elliptical and circularly polarized light can be produced and analysed.

15. Derive Sabine's formula for reverberation time.

(or)

16. Explain with neat circuit the generation of ultrasonic waves using piezoelectric method. Mention the application of ultrasonic.

17. Determine the potential field due to a solid sphere. Explain the variation of gravity due to latitude and altitude.

(or)

18. Give the theory of torsion pendulum and discuss the determination of moment of inertia of a disc and rigidity modulus of a wire.

19. Derive Schrodinger's time dependent and time independent wave equations.

(or)

20. Discuss in detail the Compton effect.