

Register Number

--	--	--	--	--	--	--

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

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

Title of the Paper: Applied Physics – I

Max. Marks: 80

Sub. Code: 4ET103-5ET103 (2004/2005)

Time: 3 Hours

Date: 03/12/2010

Session: FN

PART - A

(10 X 2 = 20)

Answer ALL the Questions

1. Explain the formation of ice on ponds.
2. Compare the modes of heat transfer convection and radiation.
3. State the superposition principle of light waves.
4. Define the phenomenon diffraction of light.
5. Distinguish between musical sound and noise.
6. Mention the properties of ultrasonics.
7. Define the terms gravitational field and potential.
8. What is Poisson's ratio?
9. Give the significance of Schroedinger's wave equation.
10. Explain the origin of X-rays.

PART – B
Answer All the Questions

(5 x 12 = 60)

11. Describe the Lee's disc method to determine the coefficient of thermal conductivity of a bad Conductor.
(or)
12. Explain the construction and working of disappearing filament pyrometer.
13. Explain with theory the air-wedge method to find the thickness of a thin wire.
(or)
14. Explain the production, detection and analysis of plane, circularly and elliptically polarized lights.
15. What is reverberation? Derive Sabine's formula for reverberation time.
(or)
16. Explain the following (a) NDT and (b) SONAR.
17. Discuss the variation of acceleration due to gravity, due to latitude, with altitude and with depth.
(or)
18. With necessary theory explain how to determine moment of inertia of a disc and rigidity of a material of a wire using torsion pendulum.
19. Explain the application of Schroedinger's wave equation to particle in a 1-D box.
(or)
20. Derive the expression for Compton Wavelength in scattering of X-rays.

