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SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E/B.Tech - AERO/M&P/BME/MECH

Title of the Paper: Applied Physics – II

Max. Marks: 80

Sub. Code: 4ET203B-5ET203B

Time: 3 Hours

Date: 10/12/2010

Session: AN

PART - A

(10 X 2 = 20)

Answer ALL the Questions

1. Define viscosity.
2. Write short notes on streamline motion.
3. Name any two applications of Joule-Thomson effect.
4. What is meant by refrigeration?
5. What are photo elastic materials?
6. Define photo elastic effect.
7. Explain chain nuclear reactions.
8. Give an example of a nuclear fusion reaction with the help of an equation.
9. Mention any two applications of ultrasonic waves.
10. List out any four properties of X-rays.

PART – B
Answer ALL the Questions

(5 x 12 = 60)

11. Derive an expression for viscosity using Poissulle's method for flow of liquid through a capillary tube.
(or)
12. (a) Write short notes on turbulent flow of liquids.
(b) Explain the construction and working of Venturimeter with the help of a neat diagram.
13. What is Joule-Thomson effect? Derive an expression for Joule-Thomson coefficient.
(or)
14. Define adiabatic demagnetization. Explain the various stages of refrigeration cycle with the help of neat diagrams.
15. How is stress and strain measured by photo elastic bench? Explain the same by using necessary diagrams.
(or)
16. State and derive stress-optic law and hence explain the formation of isoclinic and isochromatic images.
17. Name the general parts used in any nuclear reactor. Discuss in detail the types of research nuclear reactors with necessary diagrams.
(or)
18. Discuss in detail the construction and working and applications of power nuclear reactor with neat diagrams.
19. Define phonocardiograph. Also explain its construction and working with the help of neat Sketch.
(or)
20. Write short notes on gamma camera. Discuss the construction and working of a scintillation detector with diagrams.