

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

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

Title of the paper: Applied Physics - II

Semester: II

Max. Marks: 80

Sub.Code: ET203B/3ET203B/4ET203B/5ET203B Time: 3 Hours

Date: 13-12-2007

Session: AN

PART – A

(10 x 2 = 20)

Answer All the Questions

1. Distinguish between stream line and turbulent flow.
2. Define co-efficient of viscosity
3. What is adiabatic demagnetization?
4. Write any two magnetic thermometers for measuring low temperatures.
5. What is photo elastic effect? Mention any two materials.
6. Define stress optic law.
7. Distinguish between fission and fusion.
8. What is chain reaction? Explain with examples.
9. What are the applications of ultrasonics in medicine (any four)
10. Mention any four properties of X – rays.

Part – B

(5 x 12 = 60)

Answer All Questions

11. a. State and prove Bernoulli's theorem. (7)
b. Describe the construction and working of venturimeter. (5)
(or)
12. a. What is meant by critical velocity. (4)
b. Obtain Poiseuille's formula for determination of Viscosity of liquids. (8)
13. a. Discuss in detail the Cascade process of liquefying gases. (8)
b. Describe the principle of refrigeration. (4)

(or)

14. a. Give a detailed account on Joule-Thomson effect with the relevant theory. (8)
b. Explain how the low temperature is obtained using adiabatic demagnetization. (4)
15. a. Discuss the effect of stressed model under a plane polariscope. (8)
b. Explain the applications of photoelastic method with examples. (4)

(or)

16. a. What are Isoclinic and Ischromatic fringers? Explain how they are Produced. (8)
b. Describe the construction and working of photo elastic bench. (4)
17. a. What are thermonuclear reactions? Discuss the carbon-nitrogen cycle of thermonuclear reactions. (8)
b. Discuss the conditions for sustained nuclear fission reaction. (4)

(or)

18. a. Describe with a neat sketch the construction and working of a nuclear reactor. (8)
b. What are moderators? Give examples. (4)
19. a. Distinguish between radiography and fluoroscopy. (4)
b. Explain the construction and working of m T_c⁹⁹ generator and describe how it is obtained? (8)

(or)

20. a. Describe the construction and working of Gamma ray camera. (7)
b. Discuss the working of photomultiplier tube. (5)