

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E / B.Tech - (Common to ALL Branches)

Title of the paper: Applied Physics - II

Semester: II

Max. Marks: 80

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

Time: 3 Hours

Date: 09-05-2007

Session: FN

PART – A

(10 x 2 = 20)

Answer ALL the Questions

1. State Bernoulli's theorem.
2. Define critical velocity
3. Explain Joule-Thomson Effect.
4. Distinguish between adiabatic and isothermal processes.
5. What is birefringence?
6. Define isoclinic and isochromatic fringes.
7. List the similarities and difference between nuclear fission and fusion reactions.
8. Determine the energy equivalent of 1 a.m.u.
9. What are the limitations of X-ray radiography?
10. What are the uses of phonocardiography?

PART – B

(5 x 12 = 60)

Answer All the Questions

11. (a) State the continuity equation. (3)
(b) Derive an expression for the measurement of discharge through Venturimeter. (9)
- (or)
12. (a) Discuss Poiseuille's method for the flow of liquid through a capillary tube. (8)
(b) Explain briefly streamline and turbulent motion.

13. (a) Define Refrigeration and Refrigeration capacity. (4)
(b) With a small sketch explain the working of vapour compression refrigeration system. (8)
(or)
14. (a) Explain in detail the adiabatic demagnetization process. (8)
(b) Write short notes on cascade process. (4)
15. What is the effect of a stressed model in plane polariscope? Explain with theory? (12)
(or)
16. (a) Discuss stress-optic law. (4)
(b) Give a block diagram of photo elastic bench and describe its components. (8)
17. (a) What is a nuclear fission reactions? (2)
(b) How is the energy released in nuclear fission ? (3)
(c) What are the conditions needed to produce a continuous nuclear fission reactions? (7)
(or)
18. (a) What is nuclear reactor? (2)
(b) Explain the essential components of a nuclear reactor with a neat sketch. (10)
19. (a) Give an account on the recording of the heart sounds by phonocardiograph. (9)
(b) What are the applications of Phonocardiography? (3)
(or)
20. (a) Explain the working principles of scintillation counter and gamma camera. (10)
(b) Distinguish between radiography and fluoroscopy. (2)