SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act,1956)

Course & Branch :B.E/B.Tech - AERO/BME/M&P/MECH
Title of the Paper :Applied Physics – II   Max. Marks :80
Sub. Code :4ET203B/5ET203B   Time : 3 Hours
Date :15/05/2010   Session :FN

PART - A   (10 x 2 = 20)
Answer ALL the Questions

1. Define Bernoulli's theorem.

2. Define critical velocity.

3. What is refrigeration?

4. State Joule Thomson effect.

5. State stress-optic law.

6. What is meant by photo elastic effect?

7. Explain nuclear fusion with example.

8. Briefly explain the uses of coolant in nuclear fission.

9. Define phonocardiography.

10. Applications of Technetium 99m.

PART – B   (5 x 12 = 60)
Answer All the Questions

11. Explain any four applications of Bernoulli's principle in detail.

(or)

12. Derive Poiseuille's formula for flow of liquid through a capillary tube.

13. Prove that enthalpy remains constant in a Joule-Thomson process.

(or)

14. Explain cooling by adiabatic demagnetization in detail.

15. What is the effect of a stressed model in a plane polariscope? Explain with theory.

(or)

16. Give the block diagram of a photo elastic bench and describe its components.

17. Explain in detail the conditions for sustained nuclear reactions.

(or)

18. Explain the following nuclear reactions:
    (a) Research reactors   (4)
    (b) Production reactors   (4)
    (c) Power reactors   (4)

19. Explain in detail about various parts of X-ray radiograph.

(or)

20. Explain the construction and working of Scintillation detector with photomultiplier tube.