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: 16-05-2008 Session: FN

PART – A (10 x 2 = 20)

Answer All the Questions

1. State the continuity equation.

2. Define critical velocity.

3. Write a short note on "Cascade Process".

4. How can you produce low temperature by adiabatic demagnetization?

5. What is Photo – elasticity?

6. State Stress – Optic law.

7. Distinguish between nuclear fission and fusion.

8. Is Hydrogen bomb is more powerful than atom bomb? Give reason.

9. Mention the physical characteristics of the heart sounds.

10. Define Half Value Thickness of a specimen.

PART – B (5 x 12 = 60)

Answer All the Questions

11. (a) State Bernoulli's theorem. (2)
    (b) Derive an expression for the Bernoulli's theorem. (10)

(or)

12. (a) Derive Poiseuille's formula for the flow of liquid through a capillary tube. (8)
    (b) Distinguish between streamline and turbulent flow of liquid. (4)

13. Explain how liquefaction of Hydrogen is done by Joule Thomson effect.

(or)

14. (a) Explain the principle of refrigeration. (4)
    (b) Explain the working of vapour compression refrigeration system with neat sketch. (8)

15. Explain the formation of isoclinic and isochromatic fringes in the case of strained model in a plane Polariscope.

(or)

16. (a) Explain the construction and working of photo elastic bench with suitable diagram. (8)
    (b) List any four advantages of photo-elasticity. (4)

17. Explain the following stellar thermonuclear reactions:
    (a) Proton – Proton (P-P) chain
    (b) Carbon – Nitrogen (C-N) cycle.

(or)

18. What are the essential components of a nuclear reactor? Describe the function of each component?

19. (a) Explain the function of phonocardiography.
    (b) Distinguish between radiography and fluoroscopy.

(or)

20. (a) Describe the working of Gamma ray camera with neat diagram.
    (b) Describe the function of Scintilation counter.