C. ABDUL HAKEEM COLLEGE (AUTONOMOUS),
MELVISHARAM - 632 509.
SEMESTER EXAMINATIONS, APRIL - 2018

B.Sc., PHYSICS **SEMESTER VI**

U15EPH602 /U14EPH602 - APPLIED PHYSICS (ELECTIVE - III)

Time: Three Hours Maximum: 75 Marks

SECTION - A (10 X 2 = 20 Marks)

Answer **ALL** Questions.

1. What are the kinds of defects present in the material?
2. What is called Non-Destructive Testing?
3. Give a short account on steady state theory.
4. What is called White Dwarf?
5. Give the principle of fiber optics.
6. State the conditions for Total Internal Reflection.
7. Define Seismology.
8. What is S wave?
9. Give some advantages of concentrating collectors.
10. Define Solar constant.

SECTION - B (5 X 5 = 25 Marks)

Answer **ALL** Questions.

11. a) Describe briefly about Visual Inspection.

(Or)

b) Give an account on Eddy Current Testing method.

12. a) What are planets? Give the laws of motion of planets, name some inner and outer planet.

(Or)

b) Write short notes on White dwarfs.

13. a) Compute the Numerical aperture and acceptance angle of an optical fiber from the following data- Refractive index of core n_1=1.55, Refractive index of cladding n_2=1.50, surrounding medium (air) n_0=1.

(Or)

b) Draw and label the block diagram for fiber optic communication system.

14. a) Explain briefly about effect of boundaries in Seismology.

(Or)

b) Give an account on seismic waves resulting phase.

15. a) Explain flat-plate collectors.

(Or)

b) Describe Solar air heaters.

SECTION - C (3 X 10 = 30 Marks)

Answer **ANY THREE** Questions.

16. Write short notes on (a) Magnetic Particle Testing (b) Liquid Penetration Testings and also draw required diagrams.
17. Discuss briefly on Neutron stars.
18. Derive an expression for Numerical aperture and Acceptance angle in optical fibers.

19. Discuss in detail about the Major discontinuities and resulting phase of seismic waves.
20. Explain the physical principle of the conversion of solar radiation into heat.

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