LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **PHYSICS**

FIFTH SEMESTER – **APRIL 2014**

PH 5403 - GEOPHYSICS

Date : 11/04/2014   Dept. No.   Max. : 100 Marks
Time : 01:00-04:00

PART A

Answer **ALL** the questions   (10 × 2 = 20)

1. What is a Seismic wave? Classify it.

2. What do you mean by time distance curve?

3. Write the seismographic equation.

4. Distinguish Rayleigh waves and love waves.

5. Define focus of an earth quake.

6. Write the Laplace and Poisson's equation for gravitational potential.

7. Give Maxwell's electromagnetic equations.

8. List any two causes of earth's magnetic field.

9. What do you mean artificial radioactivity?

10. What are the sources of heat within earth?

PART – B

Answer any **FOUR** questions   (4 × 7.5 = 30)

11. Obtain an expression for density gradient from the velocity of Seismic waves.

12. Explain the Seismic waves along free surfaces (Rayleigh waves).

13. Describe Ricter's equation and give the classification of earth quakes.

14. Explain proton precession magnetometer to find the earth magnetic field.

15. Write a note on flow of heat to the surface of earth.

PART – C

Answer any **FOUR** questions   (4 × 12.5 = 50)

16. Explain the major discontinuities and resulting phase of seismic waves.

17. Explain Strain seismograph and obtain seismographic equation.

18. Describe the Worden gravimeter to measure acceleration due to gravity.

19. Explain the construction and operation of Alkali vapor magnetometer.

20. Describe the potassium-argon decay scheme to determine age of rocks.

****