



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION - PHYSICS

FIFTH SEMESTER – NOVEMBER 2011

PH 5403/5400 - GEOPHYSICS

Date : 12-11-2011
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

PART – A

Answer **ALL** the questions

(10 X 2 = 20)

1. What is meant by phases in seismic waves?
2. Distinguish between epicenter and hypocenter.
3. Differentiate between Love waves and Rayleigh waves.
4. What is a travel time curve?
5. Define the terms focus and hypocenter of an earthquake.
6. What are the different types of fault occurring in an earthquake?
7. Write down Maxwell's equations in electromagnetic units.
8. Name 3 types of magma and give their chemical composition
9. Briefly elucidate the Gauss method of determining the earth's magnetic field.
10. List the two possible sources of heat within the earth.

PART – B

Answer any **FOUR** questions

(4 X 7.5 = 30)

11. What causes earthquakes?
12. Discuss the variation of temperature within the earth.
13. Outline the principle and construction of the strain seismograph.
14. Explain the principle and working of the Worden gravimeter.
15. Outline the principle and working of the proton precession magnetometer.

PART – C

Answer any **FOUR** questions

(4 X 12.5 = 50)

16. Discuss the different types of body waves and surface waves with relevant diagrams.
17. What are the various properties that can be derived from the S and P wave velocities?
18. Give the theory of radioactive dating of rocks and minerals using Rb⁸⁷ decay scheme
19. Explain the plate tectonic theory in detail
20. Describe the principle and working of the alkali vapour magnetometer

