



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PHYSICS

FIFTH SEMESTER – APRIL 2016

PH 5403 / PH 5400 / PH 5410 - GEOPHYSICS

Date: 03-05-2016
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

PART A

Answer ALL questions.

(10x2=20)

1. What is an earthquake?
2. Write a short note on subduction zone.
3. Why is timber supposed to be one of the best materials for construction of earthquake resistant buildings?
4. Distinguish between P-waves and S-waves.
5. Write down the Laplace's and Poisson's equation satisfied by gravitational potential.
6. How earth behaves like a magnet?
7. Define magnetic Renold's number.
8. Draw travel-time curve for seismic waves.
9. Find the radiation activity of 1mg of Sr^{90} . The half-life period of Sr^{90} is 26 years.
10. Discuss the significance of absolute measurements of gravity.

PART B

Answer ANY FOUR questions.

(4x7.5=30)

11. Give the detailed study on elastic rebound theory in seismology.
12. Discuss briefly the two measures of earthquake.
13. Describe gravity analysis by worden gravimeter.
14. Explain magnetic response of earth by dynamo theory.
15. What is geochronology? Write a short note on carbon-14 method of dating.
16. Briefly discuss the process of heat transfer within the earth.

PART C

Answer ANY FOUR questions.

(4x12.5=50)

17. Give a general view of the internal structure of earth as revealed by the seismological evidence.
18. Describe briefly the direct and indirect effects of an earthquake.
19. Explain the working of seismic detector.
20. With neat sketch explain the working of alkali vapour magnetometer.
21. Discuss the significance of radioactive dating by rubidium-strontium method of dating.
22. Give an account on the effect of major Seismic discontinuity?
