

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



M.Sc. DEGREE EXAMINATION – PHYSICS
SECOND SEMESTER – APRIL 2016
PH 2956 – GEOPHYSICS

Date: 27-04-2016
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

PART A

Answer ALL questions.

(10x2=20 marks)

1. What is seismology?
2. Differentiate geoid and spheroid surfaces?
3. Define magnetic renold's number?
4. List the significance of carbon -14 method of dating?
5. Write a short note on resistivity meters?
6. What is meant by sea floor spreading?
7. If Th^{182} has a half-life of 21.5 hours, how many grams of a 10 g sample would have decayed after exactly three half-lives?
8. Define Richter scale of magnitude.
9. How earth shows magnetic behaviour?
10. What are the common earthquake damages in buildings? What measures do you suggest to prevent them?

PART B

Answer any FOUR questions

(4x7.5=30 marks)

11. What are the main characteristics of seismic waves?
12. In detail, explain seismic discontinuity?
13. Explain radioactive dating of rocks by rubidium-strontium method?
14. Obtain an expression for resistivity measurements by a) single current electrode at depth b) single current electrode at surface.
15. Discuss the origin of main field of earth.
16. Write a short note on horizontal seismograph.

PART C

Answer any FOUR questions

(4x12.5=50 marks)

17. Discuss briefly the direct and indirect effect of an earthquake? How do human activities induce earthquake?
18. With neat sketch explain interior of earth and its compositions.
19. Discuss absolute and relative measurements of gravity analysis.
20. Briefly explain about the working of alkali vapour magnetometer.
21. Describe briefly
 - a. Size and shape of earth.
 - b. Temperature and pressure variations of earth.
22. Explain continental drift by plate tectonic theory.
