



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PHYSICS

FIFTH SEMESTER – NOVEMBER 2017

PH 5410 - GEO PHYSICS

Date: 15-11-2017
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART A

Answer ALL questions.

10×2=20

- 1.Name the two kinds of body waves.?
- 2.What is meant by the focus and epicenter of an earthquake.?
- 3.How do you determine earthquake's intensity .?
- 4.Draw horizontal seismograph and name the parts.?
- 5.Define shadow zone.?
- 6.How earth behaves like a magnet?
- 7.Differentiate interpolate and intraplate earthquakes.?
- 8.How do you find acceleration of gravity by absolute method?
- 9.Write a short note on magnetometers.
- 10.A carbon specimen found in a cave contained $\frac{1}{8}$ as much as an equal amount of carbon in living matter.
Calculate the approximate age of specimen.The half-life of C-14 is 5568 years.

PART B

Answer any FOUR questions

4×7.5=30

- 11.Explain how age of earth ,age of rocks and age of fossils are determined by various types of radio active dating.
- 12.What are plate tectonics and how are they related to continental drift and sea floor spreading?
- 13.Discuss in detail the working of alkali vapour magnetometer.
- 14.a.On what factor is the assignment of an earthquake's magnitude based?(3)
- 14.b.Is magnitude same as intensity?
- 15.Distinguish between Lithosphere and Asthenosphere.
- 16.Write a short notes on seismic design theory.

PART C

Answer any FOUR questions

4×12.5=50

- 17.Discuss the main characteristics of seismic waves.
- 18.Describe briefly the direct and indirect effects of an earthquake.

19.a. Give the theory of seismic moment magnitude. (7)

b. An earthquake causes an average of 2.6m strike slip displacement over a 75 km long, 22 km deep portion of a transformed fault. Assuming the average rupture strength along the fault as 180Pa, estimate the seismic moment and moment magnitude of the earthquake. (5.5)

20. Neatly draw saturation induction magnetometer, and explain how the magnetic response can be analyzed?

21. Explain the working of worden gravimeter with neat diagram.

22. Briefly discuss about seismic discontinuity.