



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – PHYSICS

SECOND SEMESTER – APRIL 2017

PH 2956 - GEOPHYSICS

Date: 28-04-2017
01:00-04:00

Dept. No.

Max. : 100 Marks

PART A

Answer ALL Questions
(10x2=20)

1. What is seismology?
2. Define focus and epicenter of earthquake.
3. What do you mean by Guttenberg-wiechert discontinuity?
4. Write down Laplace's and poisson equation on gravitational potential.
5. The disintegration constant of a radio active element is 0.00231 per day. Calculate its half life and mean life .
6. Differentiate absolute and relative measurements on gravity analysis.
7. Calculate S-wave velocity, with the given data P-wave velocity is 8km/s and poisson's ratio is 0.25.
8. Write a short note on composition of core.
9. List out the merits and demerits of proton precession magnetometer.
10. How Earth behaves like a bar magnet?

PART B

Answer ANY FOUR Questions

(4x7.5=30)

11. Distinguish between body waves and surface waves.
12. Discuss resistivity analysis by wenner and schlumberger 11electrode spreads.
13. Find the radiation activity of 1 mg (10^{-6} Kg), of Sr^{90} . The half-life period of Sr^{90} is 28 years.
14. Write a short note on geological time scale.
15. Explain graphical method of gravity analysis for a thin rod.
16. What is the Primary and secondary effects of Earthquake.

PART C

Answer ANY FOUR Questions.

(4x12.5=50)

17. Obtain Seismography equation for horizontal Seismograph with damping correction.
18. Discuss in detail wiegner's continental drift on plate tectonic theory.

19. Describe Potassium argon method of age determination of rocks?
20. With a neat diagram ,explain the working of alkali vapour magnetometer.
21. Discuss in detail the gravity analysis by worden gravimeter.
22. .a)Determine earth's resistivity by two current electrodes on the surface.
b)Discuss field work analysis of resistivity meters.

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