

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH KOLKATA

Date: 18/09/2018 FN Time 1 Hr. Full Marks 20 No. of Students 28
Autumn Semester 2018-2019 Department of Earth Sciences Sub. No. ES3105
3rd Yr. BS-MS Earth Sciences (Major) Sub. Name Seismology
Instruction: Answer all questions. Please write brief and to the point answers.

Q1. Derive the homogeneous equation of motion and from it derive the seismic wave equation for an isotropic-homogeneous layered Earth. (10)

Q2. A sample of granite in the laboratory is observed to have a P-wave velocity of 5.5 km/s and a density of 2.6 Mg/m^3 . Assuming it is a Poisson solid, obtain values for the Lamé parameters, Young's modulus, and the bulk modulus. Express your answers in pascals. (10)

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SUPRIYO MITRA

Name of Paper setter


18/9/2018

Signature of Paper-setter