ES1101 : Earth and Planetary Sciences

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Problem 1 How do we know that Earth is a zoned planet?

Solution

Problem 2 How old is the oldest oceanic and continental crust? Why is the oldest oceanic crust so much younger than the continental crust?

Solution

Problem 3 What are the different types of seismic waves?

Solution

Problem 4 State at least two differences between P and S waves.

Solution

Problem 5 What are the physical properties of the material that controls the propagation of seismic waves?

Solution

Problem 6 What are the heat sources present in the Earth?

Solution

Problem 7 What is the pressure at the crust-mantle boundary?
(The rate of change of pressure beneath the earth is ≈ 30 MPa/km. 1 MPa $= 10$ bar*)*

Solution

Problem 8 If the focus of an earthquake is at 0° from the centre of the Earth, what are the intervals of the shadow zones for P and S waves?

Solution The shadow zone intervals for seismic waves are as follows.

1. P waves : -105° to -142° , $+105^\circ$ to $+142^\circ$.
2. S waves : -105° to $+105^\circ$.