

EPS 50 – Review for Midterm 2 (Fall 2009)

The following is a list of key questions derived from the assigned reading and the topics of lectures 9-17, and labs 5-8. The midterm will have short answer questions derived from this study guide. You are allowed a 1-sided, 8.5x11 “cheat” sheet.

What are normal, reverse and strike-slip faults? How does an earthquake focal mechanism (beach ball diagram) relate to the motion on the fault? What do the shaded and unshaded regions on the diagram represent? How is the diagram related to the direction of stress acting on the fault?

Explain the terms anticline and syncline. If you found tilted beds in the field how could you tell they were part of a anticline or syncline (in the absence of seeing both limbs in outcrop)?

Study figure 8.9, 8.10, (10.9, 4th ed) in the book on cross-cutting relationships: How are cross-cutting relationships used in the dating of geologic materials? Given cross-sectional view of deformed geologic units be prepared to unravel the history based on observed cross-cutting relationships.

Why is the core thought to be the source of the Earth’s main magnetic field?

What is the difference between a transform fault and a fracture zone? Explain the sense of motion on a transform fault joining two mid-oceanic ridge segments.

What are P, S, Love and Rayleigh waves? Which is fastest? Slowest? What are the particle motions?

What types of waves can propagate in the outer core of the Earth? In the inner core?

What are PKP, PKIKP, PKiKP, PKJKP, PP, SKS??

Explain how earthquakes are located using seismic recordings.

What is paleoseismology? How is it used in earthquake forecasting?

Explain the core shadow zone.

What does the velocity profile of the Earth look like for P waves? S waves? Be sure to identify the major discontinuities.

Explain the Elastic Rebound Theory? How does this fit in the earthquake cycle?

What is Coulomb stress? How can estimates of stress change due to an earthquake be used to evaluate future seismic hazard?

What are the factors that can lead to mass wasting?

Compare and contrast a slide, a slump and an earth flow?

How can tsunamis be generated without an earthquake?

What is Darcy's law?

What is an aquifer and aquiclude? What types of geologic materials typical make up each? How does an artesian well work?

How does Karst topography come about?

Define stream discharge, competence, and capacity?

How do streams dynamically adjust their flow as the water volume increases and decreases? Consider both confined and unconfined channels.

What is the "long profile" of a river.

How do the processes of erosion and deposition work in concert to produce a meandering stream?

What is an "oxbow lake," and how are they formed?