

Geology 120
Problem Set #2
Ch. 5-7

Volcanism

1. What part of volcanic hazard has been most destructive to human lives?
2. What aspects of active volcanism have been beneficial for civil development?
3. What gases are typically emitted by volcanoes?
4. List several factors that determine whether a volcano will erupt violently or by slow oozing.
5. What materials form the slopes of a cinder cone? How is this different from the composition of a large stratovolcano?
6. What is the difference between aa and pahoehoe
7. What causes the formation of hexagonal columnar jointing in cooled lava flows?
8. What does a volcanic tremor indicate and how is it different from earthquakes that occur at transform fault boundaries?

Weathering and Soils

1. What is spheroidal weathering and how does it occur?
2. Why is groundwater in arid regions usually alkaline and acidic in humid regions?
3. What part of the US experiences the most acidic rainfall?
4. What is the difference between erosion and weathering?
5. What are sheet joints?
6. Explain the common local sight of a sloping hillside of medium-sized boulders.
7. What factors affect the rate of soil formation?
8. How does mechanical weathering affect the rate of chemical weathering?

Sedimentary Rocks

1. List 3 different common cements for sedimentary rocks. How might each be identified?
2. What minerals are the most common in detrital sedimentary rocks? Why are they so abundant?
3. Name 3 different types of evaporates and describe how they form.
4. What is the difference between clastic sedimentary rocks and crystalline sedimentary rocks?
5. You travel in a time machine to Sandy Hook, NJ 30 million years in the future. What type of sedimentary rock will you likely find there? Why? What type of sedimentary structures will you likely see?
6. In a graded bed, does the particle size increase or decrease with depth? How does the graded bed form?
7. Distinguish between the two categories of chemical sedimentary rocks.
8. You impress your friends and family by identifying an outcrop of greywacke when you are out hiking in Pennsylvania. Your dad asks you how this rock was formed – what do you say?