

Use your field observations, our discussions, and resources (e.g. notes, maps) to explain each of the questions below to the extent that you can enter into meaningful discussion when we gather in class. See also your Smith & Smith text: Smith, Ch 21, esp. p 417-426

1. Normally rivers and streams flow from mountain plateaus down onto the plains (e.g. Potomac River flows from Appalachians to the coastal plain). However, Salt Creek flows in a direction from the interior plains of Ohio and into a wide flat valley that leads into the Allegheny Plateau through a narrow V-shaped valley.
2. Species richness of molluscs, particular freshwater clams, are more abundant in the headwater areas of Salt Creek and the Hocking River than in the lower reaches below the place where Queer Creek joins Salt Creek.
3. Well-driller's logs for years recorded very large "depths to bedrock" in certain areas within the Till Plains of Ohio. How do such data support the existence of a pre-glacial river system?
4. Both Clifton and Cedarville are located on rivers at a point in which the water begins a rapid descent, flowing over Silurian limestone formations that are exposed as steep cliffs and gorges. How do these limestone exposures relate to the bedrock structure "beneath Ohio?"
5. In southeast Ohio, southern PA, and areas further south the landscape is "older" and more rugged; and, the soils, streams, and rivers have a lower pH (7 or below) and conductivity.
6. Black Hand Sandstone deposits, now composing the cliffs of Hocking Hills, contains unsorted textures ranging from sand particles up to gravel, with frequent cross-bedding ("grain" running at different angles and often interrupted).
7. Growth and expansion of arctic and alpine glaciers in a post-flood ice age are believed to be the result of thermal and hydrologic events associated with the fact that land masses cooled faster than the oceans in the post-flood era (and proposed transition from a circumglobal tropical Earth with a tropical-to-arctic range of conditions).
8. Some conservation biologists see the trend toward global climate warming as a threat to "island refugia" such as the Hocking Hills. Explain the logic from an ecological perspective.
9. A hike all around Conkles Hollow the Rim Trail on a hot summer afternoon would expose one to quite different microclimates between the east rim (where we were) and west rim. Explain the cause; then, list the kinds of environmental stresses and plant adaptations.
10. A Sweet Birch grows beside an equal sized Eastern Hemlock in the same forest environment at Old Man's Cave. One has live branches in the upper half of the trunk and dead limbs almost to the ground; the other, has only live limbs near the top with a long, limbless trunk. Which species is which and what is the explanation?
11. From a bioregional perspective, explain why a species like Eastern Hemlock grows where it does and when it does?