

1. What geologic events are implied by a disconformity? By an angular unconformity? 6%
2. How do a stream's channel dimensions (width, depth) and velocity adjust in response to changes in discharge? 9%
3. Imagine that the Earth some day becomes devoid of water. How would the nature of chemical weathering change in polar region? In the arid subtropical deserts? In the equatorial tropics? 8%
4. Describe the types of plate boundaries, and give an example of each. 6%
5. List major processes that occur along each type of plate boundary. 6%
6. Describe the motion and velocity of the three major types of seismic waves. 9%
7. Discuss the relationship between the surface of the ground, the zone of aeration, and the zone of saturation in a structure-isotropic area, i.e., no fault, no folding, and no alternate pervious and impervious layers. 6%

8. Briefly describe the hydrologic cycle on Earth surface. Where does the energy that drives the cycles come from? (8%)

9. Explain where and why you would expect to find exceptionally thick accumulations of sedimentary rock. (8%)

10. What natural factors explain the recurrence of glacial events on time scales of tens of thousands of years? (8%)

11. How and why are the temperature and salinity of surface ocean water related to latitude? (8%)

12. What are the sources of water in hot springs on land? How do hydrothermal solutions form on seafloor near the mid-ocean ridges and how do they form mineral deposits. (8%)

13. List three causes of climate change that result from the interaction of Earth's internal and external systems. (10%)