

Study List 2

- 1.) What are the three main points of Darwin's Theory of Evolution.
- 2.) How much of earth is covered with water? What is the highest point on earth? What is the deepest point in the ocean. Draw the Hypsographic curve describing elevations of the surface of the earth versus percent land covered. What are the major features of this curve?
- 3.) What evidence do we have that continents are moving? What is the evidence for the theory of plate tectonics as we understand it?
- 4.) What is Plate Tectonics? What are three types of plate boundaries? Is oceanic crust or continental crust older?
- 5.) Describe three types of erosion. How are sediments sorted in river beds? In the ocean?
- 6.) Describe the physical/geological differences between the west coast and east coast of the United States.
- 7.) Why does high biodiversity allow an ecosystem to adapt to large environmental changes? How do you measure biodiversity?
- 8.) What are three ways in which different species interact. Define each and give examples from both the plant and animal kingdoms.
- 9.) What are the major driving forces that control climate? What other factors may affect climate? How do these factors lead to different biomes?
- 10.) What is the Coriolis Force? How does the Coriolis Force affect winds and currents?
- 11.) Draw a picture of the earth with the major wind patterns and surface currents and label them. Also note where the high and low pressures are on the surface of the earth. How do winds drive ocean currents?
- 12.) How are sea breezes generated? How are monsoons generated?
- 13.) What are the characteristics of El Nino? How does this affect the climate?
- 14.) Name three different biomes. Which factors are most important in determining biomes. Explain how climate and vegetation can vary with altitude and latitude.
- 15.) How do surface currents affect deep water circulation? How does deep water circulation affect climate?
- 16.) What is a species? What is an ecological niche? What are specialists and generalists? Define indicator species, native species, introduced species, and keystone species. Give examples.

- 17.) What is an ecosystem? How is an ecosystem different from a biome? What is primary succession? Secondary succession? How do species replace each other in ecological succession?
- 18.) Draw a diagram of the temperature vs. altitude labeling the troposphere, stratosphere, and mesosphere. What heats the troposphere? What heats the stratosphere?
- 19.) What is the composition of the atmosphere? What trace gases affect the radiation budget of earth's atmosphere? How have these gases been changing in recent years?
- 20.) Explain the Greenhouse Effect?
- 21.) What are ice ages? How has CO₂ and temperature varied (give ranges) from glacial to interglacial times? Explain the role of ice cores in model predictions of future global warming.
- 22.) What are positive feedbacks? What are negative feedbacks? Give three examples of each. What environmental conditions have been at "steady state" on earth due to the influences of life?
- 23.) Draw the CO₂ concentration versus time at Mauna Loa for the last 5 years. What are the major features? Explain them.
- 24.) What may be some effects of global warming? How would you live your life differently? What can we do to slow or prevent global warming?
- 25.) How does ozone protect the earth's surface from UV light? What are the reactions?
- 26.) How does chlorine radical catalyze the destruction of ozone? What are the sources of chlorine into the stratosphere? What are freons? What properties of freons allow these molecules to travel into the stratosphere?
- 27.) What is meant by the "Antarctic Ozone Hole"? Polar Vortex? Polar Stratospheric Clouds? How do physical and chemical phenomena lead to the destruction of ozone in the Antarctic spring?
- 28.) What was done to alleviate the ozone-thinning problem? What effects will reductions in freon production have on stratospheric ozone?
- 29.) What processes control the shapes of beaches?
- 30.) Name four types of estuaries. Why are salt marshes flat? Define longshore current, riptide, sand bar, drumlin.
- 31.) What is photochemical smog? What chemicals are involved? Why is they bad? How can we reduce their concentrations in the atmosphere?
- 32.) Where does acid rain come from? What are the potential impacts of acid rain on ecosystems? Buildings?

- 33.) Draw a profile of temperature with altitude in the atmosphere. Label the troposphere, tropopause, stratosphere, stratopause. What controls temperature in each elevation?
- 34.) What is a thermal inversion? Why can this lead to increased air pollution?
- 35.) What is a watershed? Name 10 species of organisms that live in your watershed. How do they interact? What are some potential threats to watershed health? And their solutions?
- 36.) What is a wetland? Why are they valuable? What ecosystem goods and services do they provide? What threatens wetlands? How do we protect them?