1. What percent of water on earth is potable?
   a. 10%  
   b. 5%  
   c. 2%  
   d. <1%

2. A(n) ________ is an underground geological structure that can store and release water

3. Define (a) Confined Aquifer and (b) Unconfined Aquifer

4. ________ can absorb and hold water, but cannot transmit it at a sufficient rate to supply springs or wells
   a. aquitard  
   b. confined aquifer  
   c. aquiclude  
   d. unconfined aquifer

5. Name regions a and b indicated below.

6. Draw the hydrologic cycle, making sure to include the following: precipitation, percolation, transpiration, groundwater flow, evaporation, condensation.

7. An artesian well is
   a. A well where water reaches the ground surface under natural pressure of the aquifer  
   b. a well formed from an inclined aquifer  
   c. trapped between impervious rock layers, but has an exposed area  
   d. all of the above

8. What is the largest aquifer in the US?
   a. Ogallala Aquifer  
   b. Edwards Aquifer  
   c. Snake River Aquifer  
   d. Mahomet Aquifer
9. Define an effluent stream.

10. Which law is used to determine groundwater flow velocity?
   a. Boltzmann’s Law
   b. Darcy’s Law
   c. Boyle’s Law
   d. Henry’s Law

11. Write the equation corresponding to your answer in question 10 and make sure to clearly define all variables in your equation.

12. True or false: Gravel is more porous than sand.

13. Which of these rocks are associated with karst topography? (You may choose more than one answer)
   a. Limestone
   b. Marble
   c. Dolomite
   d. Gypsum

14. Water will flow most quickly through which of these materials?
   a. Clay
   b. Sand
   c. Gravel
   d. Soil

15. The eroded material carried by a stream is called its
   a. Load
   b. Soil
   c. Breakoff
   d. Shave down

16. Define porosity and permeability.

17. Heavy metal contamination is most likely to come from
   a. Mining operations
   b. Vehicle emissions
   c. Croplands
   d. All of the above

18. “Blue Baby Syndrome” is believed to be caused by _______ contamination in groundwater
   a. lead
   b. copper
   c. nitrate
   d. nitrite

19. Which of these contaminants is a VOC?
   a. Pentachlorophenol
   b. MTBE
   c. Perchlororethylene
   d. Polychlorinated Biphenyls

20. Which of these sources is a common source of cadmium pollution (may choose more than one answer)
   a. Runoff from railroad ties and utility poles
   b. Corrosion of galvanized pipes
   c. Runoff from waste batteries and paints
   d. Septic systems

**PART II, the Hydrogeology Challenge, is online, and PART III is in a separate packet.**