CHAPTER 15 – GEOLOGY 12 NAME Key

Key

Complete the sentences below with the correct terms or phrases.

6. The hydrosphere includes all the water at and near the surface of the earth, including salt water, fresh water, and ice. pg 318 para 2
7. The largest reservoir for water on the earth is the oceans (salty)
8. The main processes in the water cycle are precipitation and evaporation.
9. Water that enters the ground initially will percolate through an unsaturated zone called the vadose (zone of aeration) zone, where the pore spaces in rock or soil contain water and air.
10. Below the unsaturated zone is a zone of rock or soil that is saturated with water; this zone is called the phreatic zone. (zone of saturation)
11. The top of the saturated zone is the water table, where the zone is not confined by overlying impermeable rocks.
12. Wherever a lake or perennial stream exists, the water table is locally above the ground surface.
13. When the water table intersects the earth's surface springs sometimes appear, places where water flows out of the earth spontaneously.
14. In dry seasons, and/or when human use of groundwater is high, the water table in a given area may drop/lower.
15. The processes of infiltration and migration that replace groundwater are collectively called recharge.
16. An aquifer is a rock that holds and transmits enough groundwater to be a useful source of fresh water.
17. In order to be a good aquifer, a rock should be both porous and permeable.
18. Shales are often aquitards and aquicludes because they lack porosity and permeability.
19. Groundwater is a valuable water resource because it is the largest reservoir of unfrozen fresh water on the earth.
20. An unconfined aquifer is one that is overlain only by permeable rocks and soil.
21. An aquifer that is overlain by an aquitard or aquiclude is described as confined.
22. In an artesian system, groundwater can rise above its confined aquifer under its own pressure.
23. In the case of a confined aquifer, it is more useful to describe the potentiometric surface, the height to which the water's pressure would raise the water if unconfined.
24. A confined aquifer may have a more restricted area for recharge than an unconfined aquifer of similar dimensions.
25. Locally-occurring lenses or patches of impermeable rocks within otherwise permeable ones may cause a perched water table to form, separating a small aquifer zone from the regional water table.
26. Limestone is a rock type that is particularly susceptible to solution by surface water and groundwater.

27. When an underground cave collapses, a sinkhole often appears at the surface; these may result in loss of life or property.

28. Regions which have abundant sinkholes and surface depressions are sometimes known as karst topography.

29. Removing water faster than it is recharged in an unconfined aquifer will often cause a circular lowering of the water table surrounding the well; this is known as a cone of depression.

30. Recharge is far slower than withdrawal of groundwater from the _____ formation, the principal aquifer for Nebraska and portions of Colorado, Kansas, Texas, and Oklahoma; this important aquifer may soon be depleted.

31. Problems associated with _____ due to excessive groundwater use have affected the cities of Houston, Texas, and Venice, Italy.

32. Upconing of salt water around a water well may occur in coastal areas when rapid withdrawal of fresh groundwater allows salt water to intrude.

33. Urbanization can extensively modify the area available for groundwater recharge by changing the ratio of surface runoff to infiltration.

34. Artificial recharge basins can be constructed in urban areas where groundwater recharge has been reduced. (ie ball field in N.Y.)

35. The sum of the concentrations of all dissolved solid chemicals in water is referred to as total dissolved solids (TDS)

36. Water that contains 1 ppm of salt would contain one gram of salt for every million grams of water.

37. Water that contains much dissolved calcium and magnesium is commonly known as hard.

38. Any substances that affect the quality of surface waters can also produce groundwater pollution.

39. One difficulty in tracing and treating groundwater pollution is that groundwater flows at a very slow/sluggish rate.

40. Most of the water that is considered consumed ends up in the atmosphere through evaporation.

41. The major use of withdrawn (used) water in the United States is industry (returns it after use).

42. The major use of water consumed (that is, not returned to useable reservoirs) in the United States is irrigation/agriculture

43. Moving water from upstate New York to New York City is an example of using interbasin transfers to supply local water needs.

44. In coastal areas, salt water could be used for human consumption if it were purified by a distillation process.