**Hydrology Review EOG STUDY GUIDE**

1. Describe/Define the following properties of water. **Adhesion, cohesion, surface tension, capillary action, polarity, universal solvent density, buoyancy and specific heat.**

2. On an early sunny morning, you notice some water droplets on a spider web. You are fascinated that it does fall to the ground. Which property holds them there?

3. The tendency of water molecules to stick together is known as \_\_\_\_\_\_\_\_\_\_ .
4. What causes the tightness across the surface of water? \_\_\_\_\_\_\_\_\_\_\_\_\_
5. What property allows water to rise up in a narrow tube? \_\_\_\_\_\_\_\_\_\_
6. The following is the property that states that a water molecule has both a positive and negative end is known as \_\_\_\_\_\_\_\_\_\_\_\_.

7. Water’s ability to dissolve almost any substance is known as \_\_\_\_\_\_\_\_\_\_.
8. The amount of matter in a given space is known as \_\_\_\_\_\_\_\_\_\_ or D= M/V.
9. The force that pushes up on an object that floats in water. Sometimes heavy objects will float in water because of the amount of water displace is greater that it weight. This is known as \_\_\_\_\_\_\_\_\_\_.
10. The amount of heat needed to increase the temperature of a certain amount of a substance by 1 degree is called \_\_\_\_\_\_\_\_\_\_ .
11. Most of water’s unique properties results from the fact that water molecules are \_\_\_\_\_\_\_\_\_\_
12. Illustrate and label a water molecule.

13. In a group of water molecules, hydrogen bonds form between \_\_\_\_\_\_\_\_\_\_\_.
14. What do cohesion and surface tension have in common with reference to water?

15. An object is dropped in a beaker containing a liquid. The object drops to the bottom of the beaker. Therefore, the object is \_\_\_\_\_.

16. Explain why water is known as the universal solvent.

17. Explain why ice floats in water using the term buoyant force.

18. Why is water a unique substance?

19. Describe and explain all parts of the water cycle.

20. Explain why most of the water cycle takes place over the ocean?

21. At what temperature do water vapor molecules begin to change back to the liquid state?

22. Amount of water that covers the Earth’s surface**:**
23. Of all the water the amount that is salt water:

24. Amount of freshwater**: \_\_\_\_\_%**
25. The amount of frozen water: \_\_\_\_\_%
26. The amount of available freshwater \_\_\_\_\_%
27. Most of our freshwater is used for \_\_\_\_\_\_\_\_\_\_.
28. Water beneath the Earth’s surface is called \_\_\_\_\_\_\_\_\_\_.
29. Explain the process of how water gets underground.

30. Label and illustrate the groundwater layer.

31. Layer or materials that water cannot pass through: \_\_\_\_\_\_\_\_\_\_
32. Materials water can pass through are called \_\_\_\_\_\_\_\_\_\_
33. The underground layer of water is called: \_\_\_\_\_\_\_\_\_\_
34. The top level of water in the aquifer is called \_\_\_\_\_\_\_\_\_

35. Water can be pumped for an aquifer using **an \_\_\_\_\_\_\_\_\_\_\_**
36. When the well water is under pressure and flows automatically without pumping the well is called an \_\_\_\_\_\_\_\_\_\_\_
37. Location of where the water table is above the surface is called **a \_\_\_\_\_\_\_\_\_\_\_\_**
38. What can happen when too much water is taken from a well**?**
39. What is the difference between a well and a spring? Give details.

40. The high land or ridges on both side of a drain basin / watershed is called a \_\_\_\_\_\_\_\_\_
41. What is a watershed (drainage basin)?
42. The two watersheds in Mecklenburg County are

43. Our watershed is the \_\_\_\_\_\_\_\_\_\_\_\_\_.

44. The rising and sinking of warm and cold water and nutrients in a lake is called \_\_\_\_\_\_\_\_\_\_
45. When excess nutrients enters a lake or pond it can it can force out animals life and increase plant life such as algae, etc. and eventually change from water to a land ecosystem**. This is known as \_\_\_\_\_\_\_\_\_\_\_\_\_.**
46. A structure that holds back and controls the flow of water in a river or stream is called \_\_\_\_\_\_\_\_\_\_
47. A system that collects and treats waste water for a city or municipality is called a \_\_\_\_\_\_\_\_\_\_
48. A system that collects waste water for homes in rural areas is called a \_\_\_\_\_\_\_\_\_\_
49. Most of the drinking water in NC comes from \_\_\_\_\_\_\_\_\_\_
50. The major marine (ocean) ecosystems are: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
51. An area where rivers meets ocean and the water is neither completely fresh nor salt water (the water is called brackish) is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
52. The movement of water and nutrients from deep within the ocean to the surface is called \_\_\_\_\_\_\_\_\_\_
53. Ocean water contains salt and other minerals which makes it \_\_\_\_\_\_\_\_\_\_
54. The measurement of the amount of salt in water is called \_\_\_\_\_\_\_\_\_\_
55. Gases such as **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (CO2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(O2)** are dissolved in ocean and river, etc. water and is used by organisms just like on the land.
56. As the water temperature increased, the amount of \_\_\_\_\_\_\_\_\_\_ decreases
57. Where is the ocean the hottest? \_\_\_\_\_\_\_\_\_\_

58. How can an aquatic and terrestrial food chain overlap? \_\_\_\_\_\_\_\_\_\_
59. The driving energy for most food web comes from **\_\_\_\_\_\_\_**, except **deep ocean** food webs. They get energy **from \_\_\_\_\_\_ coming** from volcanic vents on the ocean floor.
60. Organism that makes its own food are known as \_\_\_\_\_\_\_\_\_\_\_\_\_-or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
61. Organisms that eat producer or other organisms that eat the producers are called \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_.
62. Organisms that recycle dead matter for reuse is called \_\_\_\_\_\_\_\_\_\_
63. Organisms that eat only plants: \_\_\_\_\_\_\_\_\_\_
64. Organisms that eat on animals: \_\_\_\_\_\_\_\_\_\_
65. Organisms that eat both plants and animals: \_\_\_\_\_\_\_\_\_\_
66. In a food chain the energy from \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trophic levels.
67. The health of water and its suitability for use by living is a called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

68-73. Identify all possible water quality indicators. **temperature, turbidity, dissolved oxygen, acidity/alkalinity, nutrient level(phosphates and nitrates), and fecal coli form count.**
**68. \_\_\_\_\_\_\_\_\_\_-**depends on the depth of the water, the season, etc. Temps > 35 degrees C can be harmful to life.
**69. \_\_\_\_\_\_\_\_\_\_-**the muddiness of the water, often a result of algae of sediment runoff; > 25NTU for salt water and > 50 NTU for freshwater
**70. \_\_\_\_\_\_\_\_\_\_** – the amount of oxygen dissolved in the water which is necessary for aquatic life; < 5 ppm is harmful.
**71. \_\_\_\_\_\_\_\_\_\_** - measured in pH; is the amount of acid or base in the water; high pH in water usually have high amount of growth. <5 or >9 is harmful
**72. \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_** – causes plants and algae to grow; leads to eutrophication; nitrate > 1ppm and phosphate > .003 ppm will increase eutrophication.
**73. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** – use as an indicator of other more harmful bacteria. Virus and parasites in the water. > 200 colonies per 100ml of water are harmful to life.
74. The existence of foreign substances in water making it unsuitable for living organisms is called \_\_\_\_\_\_\_\_\_\_\_
75. Pollution from a known location is called \_\_\_\_\_\_\_
76. Pollution that cannot be pin point to a specific location is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_