

**2010 Area 1 Envirothon
Shelby/Mansfield KOA, Crawford County, Ohio**

Aquatics

Do not write answers on this paper.

o *Indicate the one best answer for each question on the “Aquatics” Scantron answer card.*

o *Use a No. 2 pencil*

o *Erase completely to change*

1. Agriculture and domestic uses accounts for 54% ground water in Ohio. The other 46% is used by?
 - A. Recreational Uses
 - B. Industrial Uses
 - C. Aquaculture Uses
 - D. Biological uses

2. Identify the area shown on the Ground Water Flow Model?
 - A. Unconfined Aquifer
 - B. Under Ground Storage Tank (UST)
 - C. Best Management Practices (BMP)
 - D. Confined layer

3. Small shallow depressions within woodlands that hold water during part of the year and are essential to some amphibians are called:
 - A. muck pools
 - B. breeding ponds
 - C. spring ponds
 - D. vernal pools

4. Ohio's aquifers can be divided into three major types of productive aquifers. Which of the following isn't one of them?
 - A. Sand and Gravel Aquifers
 - B. Sandstone Aquifers
 - C. Carbonate Aquifers
 - D. Interbedded Shale and Carbonate

5. The site of today's Envirothon, Shelby/Mansfield KOA in Crawford County, has the majority of what type of aquifer?
 - A. Carbonate
 - B. Sandstone
 - C. Interbedded Shale and Carbonate
 - D. None of the above

6. The small ditch located near the pond on this campground has no known name. What federal agency is tasked with naming streams?
- A. NRCS
 - B. U.S. EPA
 - C. Army Corps
 - D. USGS
7. Identify this macro invertebrate?
- A. Damsel fly
 - B. Rat-tailed Maggot
 - C. Crayfish
 - D. Stone fly
8. The Ohio EPA has the Ambient Ground Water Monitoring Program. What is the central goal of this program?
- A. provide reliable ground water quality data
 - B. program to report polluters
 - C. program to monitoring water consumption
 - D. none of the above
9. Based on what you know about healthy physical stream characteristics, how would you describe this site?
- A. Healthy with large amounts of aquatic life
 - B. Unhealthy with little or no riparian
 - C. Unhealthy with vegetation to speed up erosion
 - D. Exposed, with little or no riparian and a few aquatic species
10. Transparency tubes (sediment sticks) provide us with a snapshot of water quality. Which would be the proper way to use this instrument in the stream?
- A. Use near the stream bank for safety
 - B. Collect your sample downstream after you have entered the water column
 - C. Get your sample upstream in the middle of the water column
 - D. Drag along the bottom of the stream than take a sample
11. Soil erosion in Ohio is the state's largest surface water pollution. How would we label soil erosion in "pollution" terms?
- A. Point Source
 - B. Current point Source
 - C. Erosion point Source
 - D. Nonpoint source

12. The process of rapid plant growth followed by increased activity by decomposers and a depletion of the oxygen level is called?
- A. Eutrophication
 - B. Stratification
 - C. Old Growth
 - D. Succession
13. A landowner living along a stream has been dumping grass clippings into the stream for years. He/she has never noticed a problem with this practice until a summertime drought occurred and a number of dead fish appeared. What type of pollution occurred?
- A. Biological
 - B. Inorganic
 - C. Thermal
 - D. Organic
14. This macro invertebrate often creates a “house” made of pebbles, leaf matter and/or twigs?
- A. Stonefly nymph
 - B. Mayfly nymph
 - C. Caddisfly larva
 - D. Damselfly nymph
15. Another name for leaf material released into a stream is called?
- A. Riparian matter
 - B. Buffer matter
 - C. Allochthonous matter
 - D. Biological matter
16. A macro invertebrate that feeds on coarse, dead organic matter, breaking it into finer material that is released in their feces is called?
- A. Collector
 - B. Grazer
 - C. Predator
 - D. shredder
17. A landowner has recently cleared all trees and vegetation along a stream bank. This has caused an increase in inorganic pollution but also an increase in _____ pollution?
- A. Toxic
 - B. Thermal
 - C. Chemical
 - D. Biological

18. Safety is very important when doing any water monitoring. What is one of the first things you always should do before you stream monitor?
- A. Check the weather
 - B. Walk in the middle of the stream to check depth
 - C. Have another person with you
 - D. Wear protective eyewear
19. What are the three parameters when monitoring water quality?
- A. Habitat, chemical, biological
 - B. Chemical, biological, water volume
 - C. Water velocity, habitat, chemical
 - D. Habitat, biological, water volume
20. Streams that are perennial have constant flow during normal rainfall. Streams that are intermittent can cease flowing for weeks or months each year. What are ephemeral streams?
- A. Lasting only a day or short period
 - B. Happen only in winter months
 - C. Happen only during drought
 - D. All of the above
21. The upper level of saturation within the layer of rock is called?
- A. Surface table
 - B. Water table
 - C. Consolidated table
 - D. Unconsolidated table
22. Macrophytes are large rooted or floating aquatic plants. The pond at our testing site has few, if any. Why?
- A. Fertilizer from farm fields killed plants
 - B. Pond is chemically treated (e.g., aquatic plant control)
 - C. Aquatic plants don't grow in ponds
 - D. Aquatic plant control is prohibited by ODNR
23. Ohio has more than _____ miles of rivers and streams.
- A. 6,100
 - B. 610
 - C. 61,000
 - D. 61, 000,000
24. At least _____ percent of all Ohioans depend on ground water for drinking water.
- A. 30
 - B. 40
 - C. 50
 - D. 60

25. The Ohio Water Resources Council (OWRC) is comprised of directors of ____ state agencies. Two of the agencies are?
- A. 9, ODNR and ODH
 - B. 6, USGS and OEPA
 - C. 5, Ohio Department of Agriculture and SWCD's
 - D. 4, Army Corps and OEPA
26. Stream substrate is?
- A. Inorganic and organic particles on the stream bed (e.g., cobbles)
 - B. The area of land that drains into a stream
 - C. The portion of storm water or snow melt that enters a stream
 - D. Downward entry of water into the soil
27. Benthic refers to what?
- A. Floating aquatic plants
 - B. Bottom dwelling aquatic organisms
 - C. Bottom feeding fish
 - D. A type of wading bird
28. Portions of Crawford County (today's contest location) drain into four Ohio watersheds. Scioto, Huron and Sandusky Watersheds are three of the four. The fourth watershed is?
- A. Miami
 - B. Portage
 - C. Muskingum
 - D. Hocking
29. What pH range is needed for optimum aquatic life in our streams?
- A. 5-7
 - B. 0 - 14
 - C. 6.5 – 8.5
 - D. 7-9
30. Dobsonfly larva and mayfly nymph are pollution intolerant aquatic species, which classifies them into which water quality indicator group according to the Ohio Scenic Rivers Stream Quality Monitoring Assessment Form?
- A. Group 3 Taxa
 - B. Group 2 Taxa
 - C. Group 1 Taxa
 - D. None of the above
31. Sediment production in watersheds is generated by rill, gully and what other type of erosion?
- A. Sheet
 - B. Blanket
 - C. Cover
 - D. Organic

32. Mayflies go through which type of metamorphosis?

- A. Complete
- B. Incomplete
- C. None at all
- D. Both complete and incomplete

Answer Key

- 1. B
- 2. A
- 3. D
- 4. D
- 5. B
- 6. D
- 7. D
- 8. A
- 9. D
- 10. C
- 11. D
- 12. A
- 13. D
- 14. C
- 15. C
- 16. D
- 17. B
- 18. C
- 19. A
- 20. A
- 21. B
- 22. B
- 23. C
- 24. B
- 25. A
- 26. A
- 27. B
- 28. C
- 29. C
- 30. C
- 31. A
- 32. B