

2009 SWCD Area 1 Envirothon
Camp Clay, Van Wert, OH

Aquatics

Do not write answers on this paper.

- *Indicate the one best answer for each question on the “Aquatics” Scantron answer card.*
- *Use a No. 2 pencil.*
- *Erase completely to change.*

1. Walk into the woodlot and observe the vernal pool. What is the benefit of a vernal pool such as this?
 - a. aquifer re-charge
 - b. nursery for amphibians
 - c. reservoir for surface water
 - d. all of the above
2. Which item is the Hester Dendy tool?
 - a. b.
 - c.
 - d.
3. Of the four macroinvertebrates exhibited, which is the mayfly nymph?
 - a.
 - b.
 - c.
 - d.
4. Of the four macroinvertebrates exhibited, which is an indicator of poor water quality?
 - a.
 - b.
 - c.
 - d.
5. Based on the map provided, what order is the identified stream?
 - a. first order
 - b. second order
 - c. third order
 - d. fourth order
6. High bacteria content is an indicator of stream impairment. Another factor indicating stream impairment is:
 - a. odor
 - b. discoloration
 - c. low aquatic life diversity
 - d. all the above
7. October 2008, President Bush signed the Great Lakes Compact. The main reason for this multistate agreement being signed into law is:
 - a. controlling of invasive species.
 - b. preventing of water diversion.
 - c. windmill development on open waters.
 - d. all the above.

8. The Ohio EPA uses the Primary Headwater Habitat Evaluation (HHEI) to evaluate headwater streams in Ohio. Which of the following is not used in the calculation of an HHEI score?
- bankfull width
 - sinuosity
 - maximum pool depth
 - substrate
9. Which type of stream habitat is characterized by the presence of fast flows, shallow water, rocky substrate and a habitat for macroinvertebrates?
- eddy
 - run
 - riffle
 - pool
10. Non-point source pollution can dramatically impact a waterway's aquatic life. What is Ohio's most common source of nonpoint source pollution?
- silt, sediment and nutrients
 - hydro modification
 - habitat alteration
 - all the above
11. Watershed planning provides numerous benefits. What does watershed planning do for aquatic environments?
- helps agriculture values
 - identifies specific water quality problems and solutions
 - helps increase non-native species
 - promotes urban sprawl
12. The Ohio Environmental Council has a vernal pool partnership monitoring program. What monitoring characteristic do monitors look for when collecting information about vernal pools?
- pool location
 - water quality data
 - pool size
 - all of the above
13. Public water supply consumers benefit from water testing by the utility company; water bills pay for this service. Yearly tests are recommended for private wells and are the responsibility of the property owners. Which test would provide the most important safety information?
- total coliform bacteria
 - nitrate
 - pH
 - all the above
14. What program does the acronym SWAP represent within the Division of Drinking and Ground Water at the Ohio EPA?
- Source Water Assessment Program
 - Source Water Assurance Program
 - Source Water Agent Program
 - Source Water Affiliation Program

15. What statement best describes the *Clean Water Act*?
- establishes agencies that protect water quality
 - establishes the basic structure for regulating discharges of pollutants into waters of the United States and for regulating quality standards for surface water
 - establishes regulating authority of water quality to each state
 - none of the above
16. The *Clean Water Act* helped solve many of Ohio's traditional pollution problems. However, remaining problems, linked to nonpoint source pollution, are more challenging. Which of the following is not a way to reduce non-point source pollution?
- remove all woody vegetation from headwater tributaries
 - manage nutrient application according to site specific risk assessment
 - provide natural or artificial buffers to reduce runoff volume and delivery rate during rain and runoff events
 - remove physical impoundments such as low-head dams from streams and rivers, in order to improve natural flow and stream ecology
17. The recovery of Lake Erie from its degraded conditions of the 1960's and 1970's represents a major environmental success story. However, since the mid-1990's, conditions in Lake Erie again appears to be again deteriorating. Blue-green algal blooms have returned, and the extent and duration of anoxia also appears to be increasing. What factor(s) are believed to be contributing to the harmful algal blooms in Lake Erie?
- increases in dissolved reactive phosphorus load and invasive species
 - overburdened wastewater treatment systems
 - decline in farm crop prices and increased application of fertilizers
 - aging home-site septic systems
18. Woodlots dot the countryside of NW Ohio. Why weren't these areas cleared for farmland?
- most woodlots contain wetlands and are difficult to farm
 - all woodlots in NW Ohio are considered old growth
 - woodlots are protected by ODNR, Division of Forestry
 - all woodlots contain vernal pools and are protected by the Ohio EPA
19. Manure management has become an important issue in NW Ohio. From a water quality perspective when should manure be applied to a field?
- prior to a predicted rainfall
 - close to crop growth activity
 - after the ground has frozen
 - after the fall corn harvest
20. Each year 350,000 cubic yards of soil are dredged from the Toledo Harbor. Who is responsible for this dredging?
- city of Toledo
 - U.S. Army Corps of Engineers
 - U.S. EPA
 - ODNR
21. "Lake Rotary" at the YMCA Camp Clay is excavated in the shape of the State of Ohio. What is responsible for recharging this pond?
- stream fed
 - farm field run off
 - water pumped by local fire department
 - none of the above

22. The Van Wert Water Treatment Plant utilizes a lowhead dam to capture the city's water supply. U.S. Fish and Wildlife Service and the U.S. EPA do not favor lowhead dams because:
- they cause dam pool stagnation.
 - they limit aquatic habitat.
 - they hinder fish migration.
 - all of the above.
23. All of the following cause a decline in the stream's aquatic macroinvertebrate biodiversity numbers except:
- polluted runoff.
 - human alteration.
 - total maximum daily load.
 - invasion of non-native species.
24. Each summer many farm ponds (like the one near our aquatics test site) experience fish kills. While some kills are the result of chemical contamination, most are due to an algal die-off or a physical process called "pond turnover." Both conditions result in a decrease of dissolved oxygen levels. Another term for pond turnover is:
- thermal destratification.
 - thermal die-off.
 - thermal degradation.
 - thermal delineation.