

### **2023 Area IV Envirothon Aquatic Questions**

1. What combination of fish species is typically the most successful in Ohio farm ponds?
  - A. Channel catfish, white crappie, and green sunfish
  - B. Largemouth bass, bluegill, and channel catfish
  - C. Smallmouth bass, bluegill, and channel catfish
  - D. Walleye, yellow perch, and emerald shiners
  
2. Streams are often part of a network of many streams and rivers all leading to one place. What is the geographic feature on a landscape called, of land that drains to the same body of water?
  - A. Watershed
  - B. Channel
  - C. Riparian Area
  - D. Point source
  
3. Of the four variables listed below, which one is NOT used in wetland delineation or determining if a site is a wetland?
  - A. Topography
  - B. Vegetation type
  - C. Hydrology
  - D. Soil type
  
4. Harmful algal blooms are caused by \_\_\_\_\_
  - A. Green algae
  - B. Red Algae
  - C. Cyanobacteria
  - D. Chlorophyll
  
5. Wetlands are important parts of a healthy, functioning ecosystem. In addition to providing valuable wildlife habitat, what important function does a wetland provide?
  - A. Converts oxygen to carbon dioxide
  - B. Transports nutrients from trees to vegetation
  - C. Filters and stores water, releasing it slowly after a rain event
  - D. None of the above

6. A small intermittent stream at the headwaters of a drainage network is classified as what order using the Strahler Stream Order Classification System?
- A. Tenth
  - B. Antecedent
  - C. Braided
  - D. First
7. As a watershed is developed from agriculture/forest to more urban/industrial, what is the most significant impact to the streams and rivers?
- A. Greater amount of impervious surfaces resulting in larger flood events
  - B. More debris in the water resulting in more flooding conditions.
  - C. More drainage tile in the watershed, resulting in greater flood events.
  - D. Less surface runoff because urban environments slow water flow
8. The process in which lakes and reservoirs separate into three distinct layers (epilimnion, thermocline, and hypolimnion) is called?
- A. Turn-over
  - B. Stratification
  - C. Layering
  - D. Buffering
9. Dissolved oxygen refers to the concentration of oxygen gas incorporated in water. Which of the following is not a pathway for oxygen to enter the water?
- A. Fish respiration
  - B. Absorption from the atmosphere
  - C. Photosynthesis
  - D. Turbulence from current, wind, or waves
10. The absence of sensitive species of fish or aquatic invertebrates is indicative of a stream that is:
- A. Healthy
  - B. Impaired
  - C. Unnatural
  - D. Unmanaged

11. Streams that are deemed high quality have a greater proportion of aquatic species that are sensitive to poor water quality. Which of the following invertebrates is not considered sensitive?
- A. Caddisflies
  - B. Riffle beetles
  - C. Midge flies
  - D. Stoneflies
12. Water quality is one factor that determines what species may be found in a body of water. However, there are other factors that may prevent certain species from occurring. In a warm water quality stream, which of the following would you least expect to find?
- A. Smallmouth Bass
  - B. Muskellunge
  - C. Brook Trout
  - D. Brindled Madtom
13. Soil particles running into waterways can cause many issues. When these soil particles enter a stream and build up along the bottom, covering the crevices of rocks and other debris, it is called:
- A. Eutrophication
  - B. Sedimentation
  - C. Suffocation
  - D. Percolation
14. Various tools can be used to collect fish from our waterways. If you were trying to find live specimens from a riffle, which piece of equipment would BEST be suited for this?
- A. Seine
  - B. Bucket
  - C. Live-well
  - D. Electrofishing boat
15. Cyanobacteria are classified as:
- A. Algae
  - B. Plant
  - C. Protists
  - D. None of the above

16. Correctly identify the macroinvertebrate below:



- A. Mayfly
- B. Damselfly
- C. Stonefly
- D. Dragonfly

17. Vernal pools provide excellent habitat for many species of amphibians rear their offspring. This is because vernal pools:

- A. Have an abundance of food
- B. Have excellent water quality
- C. Lack the predators found in many permanent waterways
- D. Tend to have cooler temperatures

18. This non-native species of fish can be found in water bodies all over Ohio and is one of the largest members of the minnow family.

- A. Channel catfish
- B. Bluntnose minnow
- C. Spotted Sucker
- D. Common Carp

19. Which of these systems would not be considered lentic feature:

- A. Lake
- B. Pond
- C. Marsh
- D. Stream

20. View the picture card of aquatic plants provided and identify the nuisance species.

- A. Spadderdock
- B. Purple Loosestrife
- C. Arrowhead
- D. Curlyleaf pondweed

21. Identify the organism shown on the picture card that is Level 3 – Tolerant of Pollution using the chart provided.

- A. Cranefly larva
- B. Dragonfly nymph
- C. Blackfly larva
- D. Water Penny Larva

22. View the picture card of fish provided and identify which fish is the least tolerant of pollution.

- A. Channel Catfish
- B. Walleye
- C. Creek Chub
- D. Brook Trout

23. Use the Dichotomous Key provided to identify the macroinvertebrate.

- A. Dragonfly nymph
- B. Hellgrammite
- C. Damselfly nymph
- D. Cranefly larva

24. What is the sampling equipment shown here called?

- A. Secchi Disk
- B. DataSonde
- C. Thermometer
- D. Dissolved oxygen test kit

25. The sampling equipment shown here is used to measure which of the following water characteristics?

- A. Turbidity
- B. Temperature
- C. pH
- D. Dissolved oxygen