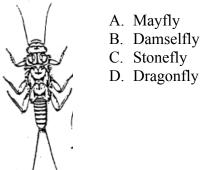
2023 Area IV Envirothon Aquatic Questions

- 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:



- 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 <u>not</u> 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