2024 Regional Iowa Envirothon Aquatics Test
(25 total points)

1. The Iowa _____ is a collaborative plan developed by Iowa Department of Agriculture and Land Stewardship (IDALS), Iowa Department of Natural Resources (DNR), and the Iowa State University College of Agriculture and Life Sciences (CALS) to assess and reduce nutrient loss to Iowa waters and, ultimately, to the Gulf of Mexico.
A. Nutrient Reduction Strategy (NRS)
B. Resource Enhancement and Protection (REAP)
C. Water Quality Initiative (WQI)
D. Water Rocks Program (WRP)

2. The "Iowa Benthic Macroinvertebrate Flow Chart" is used to classify macroinvertebrates into which groups?
A. Pollution intolerant, somewhat pollution tolerant, and pollution tolerant
B. Endangered species, threatened species, and species of special concern
C. Annual, biennial, and perennial
D. Mollusks, annelids, and arthropods
E. All of these are correct

3. According to the Iowa Department of Agriculture and Land Stewardship (IDALS) website regarding "Iowa Fish Species", how many different fish species are found in Iowa?
A. 14
B. 45
C. 148
D. 1,451

4. What is the name for this species of fish?
A. Black bullhead
B. Blue catfish
C. Channel catfish
D. Flathead catfish

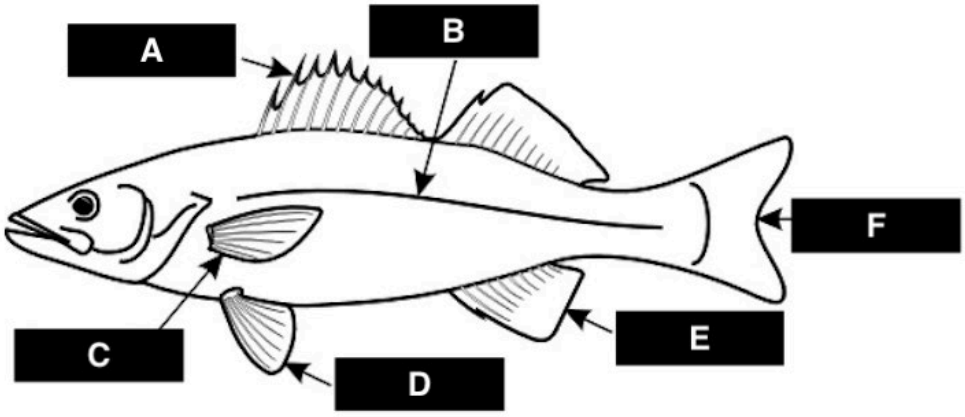


Identify the letter from the picture that matches each of the three fin names. (One point each)

5. _____ Caudal fin

6. _____ Pectoral fin

7. _____ Pelvic fin



8. The _____ works with Iowa's Watershed Management Authorities to select locations to construct and implement projects directed toward mitigating flood damage, improving water quality, and building community flood resilience.
A. Federal Crop Insurance Program (FCIP)
B. Iowa Watershed Approach (IWA)
C. IOWATER Program (IWP)
D. Water Rocks Program (WRP)

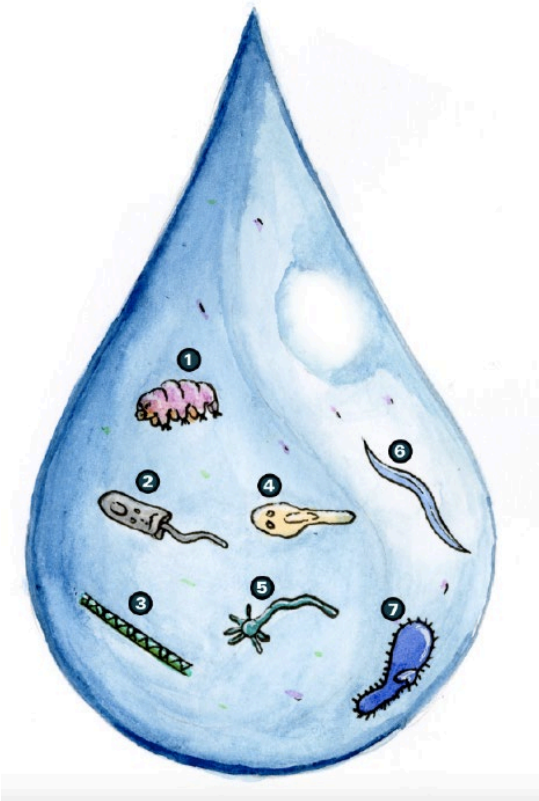
9. Rainscaping and green infrastructure practices include:
A. Bioswales, rainwater harvesting, and rain gardens
B. Bioretention cells, native turf, and permeable pavement systems
C. Constructed wetlands, river restoration, and tree boxes
D. All of these

10. _____ is the only area of the state with an abundance of clear, fast moving, winding, cold water streams, often bounded by rocky bluffs.
A. The Des Moines Lobe landform
B. Southern Iowa Drift Plain
C. Northeast Iowa
D. Loess Hills

11. _____ provide(s) the greatest input of water into Iowa's rivers, lakes, and wetlands.
A. Precipitation in the form of rain or snow
B. Melting glaciers
C. Snowmelt from mountains
D. Groundwater

12. _____ are a unique, rare type of wetland often found on hillsides and fed by groundwater. As you walk through this type of wetland area, you will experience a unique spongy feel caused by the peat soil formed from non-decomposed vegetation.
A. Fens
B. Oxbows
C. Prairie potholes
D. Grassed waterways

13. A single droplet of water is teeming with life. This picture shows the microscopic organisms found in water and includes:
A. 1) Flagellates, 2) Tardigrades, 3) Filamentous green algae, 4) Flatworms, 5) Hydra, 6) Roundworms, and 7) Paramecium
B. 1) Flagellates, 2) Tardigrades, 3) Hydra, 4) Flatworms, 5) Filamentous green algae, 6) Roundworms, and 7) Paramecium
C. 1) Tardigrades, 2) Flagellates, 3) Filamentous green algae, 4) Flatworms, 5) Hydra, 6) Roundworms, and 7) Paramecium
D. 1) Tardigrades, 2) Flagellates, 3) Hydra, 4) Flatworms, 5) Filamentous green algae, 6) Roundworms, and 7) Paramecium



14. White water lily, coontail, and phytoplankton are examples of _____ in an aquatic ecosystem.
A. detritivores/decomposers
B. primary consumers
C. producers
D. secondary consumers
E. tertiary consumers

15. Fathead minnows, northern leopard frogs, painted turtles, and water striders are examples of _____ in an aquatic ecosystem.
A. detritivores/decomposers
B. primary consumers
C. producers
D. secondary consumers
E. tertiary consumers

16. What is the name of this butterfly that starts its life by eating turtlehead, a plant which is primarily found growing in Iowa fens? (see picture)
A. Viceroy butterfly
B. Baltimore checkerspots butterfly
C. Mock Monarch butterfly
D. Queen butterfly



17. Wetlands benefit Iowa's aquatic resources by _____.
A. functioning to filter and clean water
B. providing a location to store and hold back flood waters
C. providing habitat for wildlife.
D. all of these

18. What is the name for this species of fish?
A. Ghost shiner
B. Goldfish
C. Golden shiner
D. Topeka shiner



19. Water quality is:
A. is more than the amount of pollutant or chemical in an aquatic environment.
B. is the collective biological, chemical, and physical health of the water.
C. should be monitored to determine what the quality of the water is and how it is changing over time.
D. is all of these

20. The commonly monitored biological components for determining water quality include:
A. fish, bacteria, and aquatic invertebrates.
B. nutrients, metals, pH, and pesticides.
C. measurements of water depth, clarity, and temperature.
D. all of these.

21. What does this picture show?
A. Invasive zebra mussels growing on a native mussel's shell
B. Native mussels growing on a invasive Zebra mussel's shell
C. Invasive zebra mussels growing on an invasive clam shell.
D. Zebra snails growing on an invasive clam shell.



22. Accounts of northern Iowa's landscape from European descendants moving into the state in the 1800s, referred to northern Iowa as the _____ region.
A. "coniferous forest"
B. "short-grass prairie"
C. "thousand lake"
D. All of these are correct

23. The goal of the Iowa Nutrient Reduction Strategy (NRS) is to provide a framework to achieve a 45 percent _____ through collaborative efforts between point and nonpoint sources and public and private partners.
A. increase in nitrogen and phosphorus losses to Iowa waters
B. reduction in nitrogen and phosphorus losses to Iowa waters
C. reduction in nitrogen and calcium losses to Iowa waters
D. reduction in potassium and phosphorus losses to Iowa waters

24. _____ source pollution is any single identifiable source from which pollutants are discharged, such as a pipe, tile or ditch.
Point Source Pollution is
A. Non-point
B. Non-pointed
C. Point
D. Pointed

25. What are the two nutrients that the "Iowa Nutrient Reduction Strategy" attempts to reduce for improving Iowa's water quality?
A. nitrogen and potassium
B. phosphorus and potassium
C. nitrogen and phosphorus
D. sulfur and potassium
E. calcium and nitrogen