

2024 Iowa Regional Envirothon Test: Aquatics (25 Points Total)

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

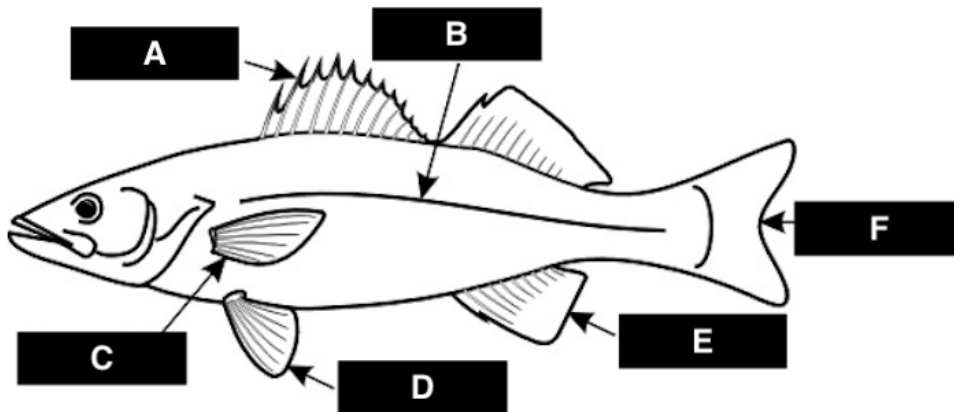


Identify the letter from the picture that matches each of the three fin names. (One point each)

5. ____ Caudal fin F

6. ____ Pectoral fin C

7. ____ Pelvic fin D



8. The goal of the Iowa Watershed Approach (IWA) includes the following:

- A. Reduction of flood risk
- B. Engagement of stakeholders through collaboration, outreach, and education
- C. Improved quality of life and health for Iowans
- D. Improvement in water quality
- E. All of these are correct*

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.

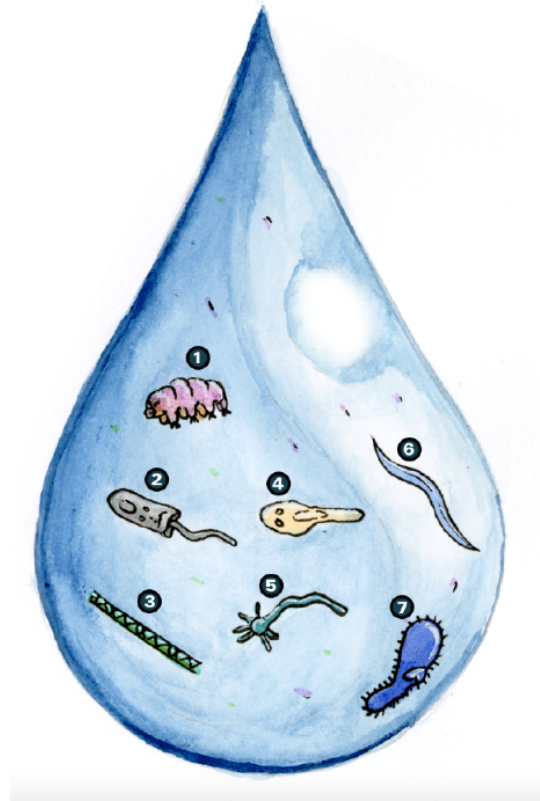
- A. Precipitation in the form of rain or snow*
- B. Melting glaciers
- C. Snowmelt from mountains
- D. Groundwater

12. Which statement regarding "Fens" is true.

- A. Fens are a unique, rare type of wetland often found on hillsides and fed by groundwater.
- B. Fens most often have no pooled water, and the groundwater is very alkaline which can lead to deposits of calcium carbonate on the ground.
- C. Walking through a fen has a unique spongy feel caused by the production of peat from non-decomposed vegetation.
- D. All of these are true*

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. Invasive species pose an ongoing threat to Iowa lakes, rivers, and wetlands because these species

- A. lead to the loss of biodiversity.
- B. hinder economic development and reduce or prevent recreational activities.
- C. serve as vectors for diseases.
- D. decrease the aesthetic value of Iowa's water.

E. all of these*

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 2022 "Water Quality Monitoring and the Water Quality Initiative" report indicates:
- A. Monitoring of nitrogen and phosphorus in streams and rivers throughout Iowa is an essential element of the Iowa Nutrient Reduction Strategy.
 - B. The state of Iowa has not adopted a standard approach or strategy for water monitoring for Water Quality Initiative projects to establish baselines and track effectiveness of the projects or progress toward Iowa Nutrient Reduction Strategy goals.
 - C. Water quality data is not publicly available for many projects and state agencies lack data to assess water quality effects of the individual practices they fund.
 - D. All of these*
24. Point Source Pollution is
- A. any single identifiable source from which pollutants are discharged, such as a pipe or ditch.*
 - B. pollution that does not have a specific point of discharge and results from rainfall or snowmelt moving over and through the ground carrying natural and human-made pollutants.
 - C. the primary source of pollution that causes hypoxia zone in the Gulf of Mexico.
 - D. All of these are correct.

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

2024 Iowa Regional Envirothon Key: Aquatics

1. A
2. A
3. C
4. C
5. F
6. C
7. D
8. E
9. D
10. C
11. A
12. D
13. C
14. C
15. D
16. E
17. D
18. D
19. D
20. A
21. A
22. C
23. D
24. A
25. C