

## REGIONAL ENVIROTHON Wildlife Test (25 total points)

**INSTRUCTIONS:** Write your answers on the Respondent Sheet.

- 1. Which of these following native snake species of Iowa is poisonous?
  - a. Rattlesnakes
  - b. Northern Water Snakes
  - c. Prairie Rattlesnakes
  - d. None of the above
- 2. Cecropia Moths, Iowa's largest moth species, go through a process of metamorphosis. What is the correct order of the process?
  - a. Egg caterpillar pupa adult
  - b. Egg worm chrysalis adult
  - c. Egg caterpillar chrysalis adult
  - d. Egg caterpillar cocoon adult
- 3. What is the largest species in the rodent family?
  - a. River Otter (Lontra canadensis)
  - b. Wolverine (Gulo gulo)
  - c. American Beaver (Castor canadensis)
  - d. Woodchuck (Marmota monax)
- 4. Female American Goldfinches utilize thistles and cattails to make their nests. What time of year do they nest?
  - a. Early Spring (March and April)
  - b. Early Summer (May and June)
  - c. Late Summer (July and August)
  - d. Fall (September and October)
- 5. Which of the following is an example of the function of a keystone species?
  - a. Woodpeckers carving out holes in trees for nesting
  - b. Bluegills controlling zooplankton populations
  - c. Millipedes eating decaying wood plant matter
  - d. None of the above

- 6. Bulls, cows and calves are terms that are used with what large North American mammal species? a. Moose, Bison, Elk, and White-tail Deer b. Bison and Elk only c. Moose and Elk only d. Moose, Bison, and Elk **MATCHING**: Match the definition with the appropriate scientific term . a. Bioaccumulation f. Dendrology b. Wildlife Corridors g. Habitat Fragmentation c. Citizen Science h. Biodiversity d. Natural Disturbances i. Phenology e. Ecosystem Services j. Flyway 7. \_\_\_\_\_The process that causes the concentration of a substance to increase as it moves up the food web.
- 7. \_\_\_\_\_ The process that causes the concentration of a substance to increase as it moves up the food web.

  8. \_\_\_\_ The study of how the biological world times natural events.

  9. \_\_\_ A positive benefit that wildlife provides to humans, which can include regulating, supporting, cultural or provisioning.

  10. \_\_\_ Public volunteers give their time to assist scientists in scientific research.

  11. \_\_\_\_ Human expansion that forces wildlife into smaller tracts of land which can cause the decline of many wildlife species.

  12. \_\_\_\_ Tract of land that connects different wildlife habitats that might otherwise be separated by human development.
- 13. The following species lay their eggs in water.
  - a. Tiger Salamander
  - b. Northern Pike
  - c. Grey Tree Frog
  - d. All of the above
- 14. The following can be hunted in Iowa:
  - a. Hungarian Partridge, Bobwhite Quail, Woodcock
  - b. River Otter, Bobcat, Moose
  - c. Elk, Mourning Dove, Wood Duck
  - d. A and C only
  - e. Bobolink

15.	Eas	tern Wild Turkeys ( <i>Meleagris gallopavo silvestris</i> ) were reintroduced in Iowa in the
	a.	1920s
	b.	1940s
	c.	1970s
	d.	They were never reintroduced.
16.		are the fastest birds of prey, clocked at over 200 mph when diving.
	a.	American Kestrel
	b.	Sharp-shinned Hawk
	c.	Peregrine Falcon
	d.	Osprey
17.	The	following insects migrate south for the winter:
	a.	Monarch Butterflies
	b.	Common Green Darners
	c.	Viceroys
	d.	A and B only
18.	wil the	ood ducks are lowa's only tree nesting duck species. Soon after hatching, Wood duck chicks II plummet as far as 50 ft. to the ground. These chicks are a great example of a species in which young hatch with feathers, good eyesight, and have the ability to feed themselves. nithologists use this word to describe this type of baby:
	a.	Precocial
	b.	Altricial
	c.	Nidicolous
	d.	None of the above
19.	Ov	erspecies of moths have been recorded in the state of Iowa.
	a.	
	b.	200 500
	c. d.	2000
	u.	2000

#### **IDENTIFICATION:** Identify each of the following.



- 20. The snake to the left is a \_\_\_\_\_
  - a. Water snake
  - b. Common water snake
  - c. Eastern milk snake
  - d. Ring necked snake



- 21. The frog to the left is \_
  - a. A Plains Leopard Frog
  - b. A Crawfish Frog
  - c. A Pickerel Frog
  - d. An Eastern Green Treefrog



- 22. The creature to the left is
  - a. An Eastern Tiger Salamander
  - b. A Tiger Salamander
  - c. An Eastern Newt
  - d. A Smallmouth Salamander



- 23. To the left is a \_\_\_\_\_\_.
  - a. Blanding's Turtle
  - b. Wood Turtle
  - c. Yellow Mud Turtle
  - d. Box Turtle

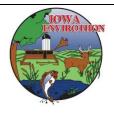


- 24. To the left is a \_\_\_\_\_\_.
  - a. Six-lined Racerunner
  - b. Slender Glass Lizard
  - c. Northern Prairie Skink
  - d. Prairie Skink



- 25. The bird to the left is \_\_\_\_\_\_.
  - a. A Golden Eagle
  - b. An Osprey
  - c. A Turkey Vulture
  - d. A Red-tailed Hawk

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TEST REVISION DATE	02/14/2011
CONTENT EXPERT	Katie Klus - Naturalist III at Black Hawk County Conservation



## 2022 REGIONAL ENVIROTHON Soils Test

(25 total points)

**INSTRUCTIONS:** Write your answers on the Respondent Sheet.

MATCHING: Match the term to the description that best fits.

Α.	Erosion	Н.	Sand	Ο.	Limestone
В.	A horizon	I.	Glacial till	Р.	Infiltration
C.	Organic Matter	J.	Bacteria	Q.	рН
D.	Loess	K.	Aggregate stability	R.	Clay
E.	Earthworms	L.	C horizon	S.	Compaction
F.	Permeability	M.	Silt	T.	Manure
G	R horizon	N	Redrock		

1.	This mineral particle has the most surface area and therefore interacts most with water and nutrients
2.	This particle holds the least amount of water
3.	The ability of a particular soil to absorb water
4.	Process where soil particles are moved by wind or water
5.	The highest biological activity would be expected in this layer
6.	This layer lacks development and appears similar to the material as it was
	deposited (parent material)
7.	Wind-blown material that covers much of Iowa
8.	Organism associated with high levels of soil quality
9.	This accumulated in Iowa's soils due to the wet prairie history
10.	This soil component controls nutrient availability to plants

**MULTIPLE CHOICE:** Select the best possible answer from those provided.

- 11. Which soil order makes up the majority of lowa's land area?
  - a. Mollisols
  - b. Alfisols
  - c. Entisols
  - d. Inceptisols
  - e. Histtosols

		The mix of sand, silt, and clay How the soil sticks together or aggregates
		The appearance of the surface
		How the soil holds together when put in water
13.	In e	estimating erosion with the USLE or RUSLE, which of the following is NOT considered?
	a.	Soil texture or susceptibility to erosion
	b.	Slope steepness and length
	c.	Previous year's erosion
	d.	Cropping practices
14.		mpaction
	a.	Generally causes increased root growth
		Is needed for nutrient transport
		Is naturally forming in Iowa
	d.	Can cause more runoff and erosion
15.	Wł	nich soil organism colonizes plant roots?
	a.	Decomposer
	b.	Mycorrhizal fungi
	c.	Nematodes
	d.	Arthropods
16.	The	three main texture classifications of soil are
	a.	Loam, sandy loam, and silty loam
	b.	Clay, sand, and silt
	c.	Bedrock, sand, and clay
	d.	Rock, silt, and humus
17.	Wh	ich of the following is NOT one of the five main soil forming factors?
	a.	Climate
	b.	Living organisms
	c.	Time
	d.	Animal activity and waste
	e.	Parent material
18.	Thi	n, wearing away of the uppermost surface of the soil profile is called
	a.	Rill erosion
	b.	Mass wasting
	c.	Sheet erosion
	d.	Soil creep

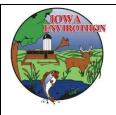
12. Soil texture refers to what?

	a.	Live, rooted plant cover
	b.	Undisturbed residue from previous crop
	c.	Contour tillage
	d.	Vertical tillage parallel to the slope
20.	A 3	% slope
	a.	Is not steep enough to cause worry about soil erosion
		Means that there is a 3 foot drop in elevation over a horizontal distance of 100 feet Does not occur often in Iowa
	d.	Means that there is a 3 foot rise in elevation over a horizontal distance of 10 feet
21.	Wh	ich of the following activities is most likely to decrease soils health?
	a.	Contour farming
	b.	Leave soil bare over winter
	c.	Strip-cropping Strip-cropping
	d.	Adding organic matter to the soil
22.	The	e four principle components of soil are
	a.	Colloids, water, oxygen, and compost
		Air, water, minerals, and organic matter
	c.	Sand, rocks, organic matter, and air
	d.	Water, rocks, oxygen, and compost
23.		nat area is adjacent to surface waters such as stream banks and shorelines?
		Upland
		Wetland
		Riparian
	d.	Buffer
24.		e soil food web contains proportions of bacteria, fungi, and other organisms. Which of the
	toll	owing statements is true?
	a.	Soil food web proportions are identical under different types of vegetation.
	b.	Forests and pastures have unique soil web proportions.
	c.	Management practices do not change the soil food web proportion if using conservation
		management practices.
	d.	None of the statements are true.

19. Which practice most effectively holds soil on a slope during a rain event?

- 25. Growing cover crops is one practice that improves soil health. Cover crops can address which of the following concerns farmers may have in regards to their fields?
  - a. Erosion control
  - b. Build organic matter levels
  - c. Break-up a compaction layer
  - d. Recycle nutrients
  - e. All of the above

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TEST REVISION DATE	02/17/2022
CONTENT EXPERT	Amber Anderson, MS - ISU Assistant Teaching Professor



d. A parasite

### **2022 REGIONAL ENVIROTHON Forestry Test** (25 total points)

**INSTRUCTIONS:** Write your answers on the Respondent Sheet.

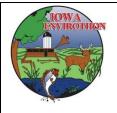
MATCHING: Match the term to the description that best fits.

U.	Xylem		Z.	Heartwood		EE. Secondary Succession
٧.	Cambium		AA	. Root cap		FF. Meristem
W.	Bark		ВВ	. Silviculture		GG. Alternate
Χ.	Sapwood		CC	. Phloem		HH. Opposite
Y.	Species con	nposition	DD	. Primary Succession		II. Trunk
1.		Main support of th	ne tre	e and tree growth; it con	tains trans	sport vessels for water.
		nutrients, and sug		, , , , , , , , , , , , , , , , , , , ,		,
2.				ork; transport water and i	nutrients ι	up the tree
		-		leaves to roots and other		·
		_ Area of growth			•	·
5.		_ Region of tissue ex	pans	ion that occurs at the tips	s of both t	wigs and roots
6.		_ Where new soil is	forme	ed and vegetation must s	tart from a	a new substrate; can be
		caused by flooding	5			
7.		_ Where a disturbar	ce cle	ears vegetation, but exist	ing soils a	nd seed sources still exist on
		the site; this can b	e cau	sed by fires		
8.			_	e establishment, growth	, composit	tion, health, and quality of
		forests and woodla				
				ferent types of trees loca		
10.		_ Branching pattern	uniqu	ue to trees such as maple	, ash, dog	wood, and buckeye
ΜU	LTIPLE CHOI	<b>CE:</b> Select the best	possi	ble answer from those pr	ovided.	
11	The native	insect two-lined che	estnu	t borer ( <i>Agrilus bilineatus</i>	s) is an exa	ample of
11.	a. An inva		Julia	t borer (Agrillas billifeatas	ij is ali cxa	
	b. Abiotic	•				
	c. Biotic fa					

12.	Wh	ich of the following trees has compound leaves?
	a.	Sugar maple (Acer saccharum)
	b.	Red oak (Quercus rubra)
	c.	Grey dogwood (Cornus racemosa)
	d.	Green ash (Fraxinus pennsylvanica)
13.	The	e living outermost portion of a woody stem or branch is
	a.	Heartwood
	b.	Pith
	C.	Growth rings
	d.	Sapwood
14.		es provide the following benefits, EXCEPT for
	a.	Increasing storm water
		Reducing energy costs
		Improving air quality
	d.	Intercepting rainfall
15.	Wh	at are some of the abiotic factors affecting the growth of trees?
		Bacteria
	b.	Wind
	c.	Water
		Fungi
		Sunlight
	f.	All of the above
	g.	B, C, & E
16.		ich one of the following trees disperse their seed using wind?
		Cottonwood
	b.	Cherries
	-	Walnuts
	d.	Oaks
17.		est composition changes with soil type, elevation, and slope aspect. Which slopes will have tree
	•	cies adapted to hot and dry conditions?  South and West
	a. b.	East and South
		North and East
		West and North
18.	Con	nmunity tree inventories provide which of the following data?
	a.	Species diversity
		Maintenance recommendations
		Tree prices
	d.	Both A & B

19.	Black walnut, red oak, and white ash trees are all considered  a. Softwoods b. Canopy trees c. Hardwoods d. Conifers
MA	ATCHING: Match the term to the description that best fits.
A.	White Oak
В.	Red Oak
C.	Black Walnut
D.	Kentucky Coffeetree
E.	Silver Maple
F.	Sugar Maple
G.	Eastern Red Cedar
Н.	Eastern White Pine
I.	Blue Spruce
20.	Produces short, wide seed pods. The seeds were previously steeped to make a drink by
	Indigenous cultures
21.	Produces a samara seed and is found naturally in bottomland forests; bats often shelter under its loose bark
22.	Is only evergreen native to all parts of Iowa, and despite its name is actually a Juniper
23.	Second in lumber value and is used for making barrels of various kinds, but a higher
	value is derived from the seed that is used by over 45 species of wildlife in Iowa
24.	Has doubly compound leaves and produces a large nut. The roots produce toxins
	which can deter tomatoes, lilac, and apples if planted nearby
25.	Has light green needles that come in bundles of 5 and are soft and flexible

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TEST REVISION DATE	02/17/2022
CONTENT EXPERT	Gabrielle Edwards, Urban Forestry Program Specialist at Iowa
	DNR



# 2022 REGIONAL ENVIROTHON Aquatics Test (25 total points)

**INSTRUCTIONS:** Write your answers on the Respondent Sheet.

MATCHING: Match the term to the description that best fits.

JJ. European watermilfoilPP. DuckweedVV. White water lilyKK. AmphipodsQQ.Tertiary ConsumerWW. PhytoplanktonLL. CoontailRR. Lacustrine wetlandsXX. ZooplanktonMM. Fen wetlandSS. WetlandsYY. Primary consumers

NN. Palustrine wetlands TT. Prairie pothole marshes

OO.Invertebrates UU.Sago pondweed

26	Wetland marshes that are the result of glacial movement
27	A wetland with no visible water, rich in biodiversity, and usually alkaline
28	Tiny shrimp-like detritivores
29	Plant that grows underwater with floating leaves
30	Branching underwater plant that is a favorite food among ducks and geese
31	Base of the food chain in many aquatic environments
32	These types of ecological systems are considered the most productive and diverse
	biological communities on Earth
33	A widespread invasive plant species
34	Wetland that borders the edge of a large body of water and has emergent and
	submersed plants
35.	Walleve and largemouth bass

**MULTIPLE CHOICE:** Select the best possible answer from those provided.

- 36. The bottom 1/3 tier of Iowa has most of the farm ponds.
  - a. True
  - b. False
- 37. The common carp is a member of which family of fish?
  - e. Sunfish
  - f. Perch

	h.	Sucker			
38.	An aquatic environment composed of running water, such as streams and rivers, is called a				
	—- е.	 Lentic ecosystem			
	f.	Watershed			
	g.	Lotic ecosystem			
	h.	Riverine wetland			
39.	The number of all wetlands that were historically found in Iowa				
	e.	Has increased due to government incentives			
	f.	Has been reduced about 95%			
	g.	Has been reduced almost 50%			
	h.	Has remained about the same.			
40.	WI	hat type of plant is arrowhead?			
	e.	Emergent			
	f.	Submersed			
	-	Free-floating			
	h.	Tertiary			
44	<b>-</b> 1.				
41.	FIO	odplains are			
		a. Areas in a field where water stands following a heavy rain			
		b. Low lying areas that border only some water bodies			
		c. Are flood prone areas where human development is always restricted			
		d. Are nature's storage area for heavy rains that help reduce downstream flooding			
42	Which one of the following statements is true concerning trout species in lowa?				
		There are only about 25 cold water trout streams in lowa			
	g.	Most trout streams in Iowa are in the northwest part of the state			
	h.	There are three different species of trout present in the state			
	i.	Iowa's trout streams are state owned			
43.	Oxbows are found in				
		Upper reaches of a river			
	f.	Lakes that are filled in with nutrients			
	g.	Abandoned river channels that are cut off from the river			
	_	Prairie potholes that are enlarged			

g. Minnow

44.	Runoff from home lawns can add what to Iowa's surface waters?			
	e.	e. Sediment		
	f.	Nutrients		
	g.	Pesticides		
	h.	A and C only		
	i.	All of the above		
15	Fish are identified using body shape, fins, scales, and mouth shape. Where is the caudal fin located?			
43.	e.	Tail		
	f.	Belly		
		Behind the gills		
	-	Back		
	11.	back		
46.		ver of a watershed is converted to impervious surfaces, significant ecologic damage		
		occur from polluted runoff, lack of ground water recharge, and increased flooding.		
		2%		
	f.	10%		
	-	25%		
	h.	30%		
47.	Rai	n gardens should be designed to handle the runoff from inches of rain.		
		1.25		
	f.	2		
	g.	2.25		
	h.	3		
48.	А١	watershed is generally defined as		
		A building that stores water		
	f.	-		
	g.	and the second s		
	-	A moment in time when you cross into a new area.		
		, ,		
49.	Wl	hat is the most common form of nitrogen found in streams and lakes?		
	e.	Phosphorus		
	f.	Nitrite		
	g.	Nitrate		
	h.	All of the above		
50.	Wetlands help improve water quality by			
	f.	Removing pollutants from surface water		
	g.	Releasing sediment		
	h.	Allowing nutrients and organic waste to flow		
	i.	All of the above		

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TEST REVISION DATE	02/14/2022				
CONTENT EXPERT	Dr. Joseph E. Morris at Iowa State University				