2024 Iowa Envirothon State Forestry Exam
Each Question is worth three points – 75 points possible

1. Use the Tree ID reference to identify the following information for the tree marked with flag #1. (One point for each correct answer)

Common name - _____

Genus - _____

Is this tree a conifer or deciduous?_____

2. The plant marked with flag #2 is which of the following invasive species?
A. burning bush
B. common buckthorn
C. autumn olive
D. honeysuckle
E. white mulberry

3. Identify the native woodland shrub marked with flag #3.
A. gooseberry
B. gray dogwood
C. multiflora rose
D. black raspberry
E. none of the above

4. Use the Tree ID reference to identify the following information for the tree marked #4. (One point for each correct answer)

Common name - _____

Genus - _____

Is this tree a conifer or deciduous? _____

5. Use the biltmore stick provided, to determine the following information for the tree identified in question #4. (One point for each correct answer)

Diameter breast height - _____inches

Number of 16' logs - _____ (*Record the maximum whole logs that can be harvested*)

Merchantable board volume - _____ board feet

6. Use the "10 factor wedge prism" provided to determine the basal area of the plot marked with flag #6.

_____sq. feet per acre

7. Identify the spring ephemeral marked with flag #7.
A. Common blue violet
B. Dutchman's breeches
C. Mayapple
D. Trillium
E. Jack-In-pulpit

8. Which of these oak species is not native to Iowa?
A. Bur oak
B. Shingle oak
C. Chinkapin oak
D. Chestnut oak
E. Northern red oak

9. When taking a basal area plot with a wedge prism, trees are called in, out, or borderline. What is the protocol for handling borderline trees?
A. Count them all as in trees.
B. Don't count any of them as in trees.
C. Count every other one as an in tree.
D. Count every third one as an in tree.

10. Which of the following are valid reasons why foresters prefer to do logging and thinning work during winter months:
A. To prevent the spread of disease, caused by accidentally damaging trees
B. To prevent disrupting nesting sites and roosting trees for threatened and endangered species
C. To limit soil and site damage
D. B and C only
E. All of the above

11. Which of the following is true regarding Iowa forests?
A. There is a trend toward shadier forests because of lack of disturbance.
B. Iowa is losing thousands of acres of oak habitat annually.
C. Oak regeneration has been negatively impacted due to the trend toward more shady forests.
D. All of these

12. Which of these tools is used to measure tree height at a given distance?
A. Hypsometer
B. Wedge prism
C. Diameter tape
D. No tool needed. Just eyeball it.

13. Although insects are the most important food source for forest birds in Iowa, the fruits of flowering plants are also an important food source for many bird species. These fruits include soft fleshy fruits, as well as nuts and acorns and are referred to as _____.
A. flora
B. mast
C. mycorrhizae
D. sepal

14. Forest _____occur(s) for wildlife when many small patches of suitable habitat are separated by inhospitable areas, like human dwellings, crop fields, or even grasslands.
A. biltmore stickiness
B. habitat fragmentation
C. secondary cavity users
D. understory

15. Which statement regarding "forest succession" is FALSE.
A. Each stage of succession provides different benefits to a variety of wildlife species.
B. Many wildlife species need more than one forest type to meet their needs.
C. Rodents and rabbits prefer early successional forest where there are plenty of grasses and shrubs for food and shelter.
D. Squirrels find both their food and shelter in mature trees found in early successional forests.
E. Deer need food found in early succession but require the denser cover of middle and late succession for shelter and escape from danger.

16. Where are the primary water and nutrient absorbers located on tree roots?
A. heartwood
B. large, permanent roots
C. mycorrhizae
D. small, temporary feeder roots and root hairs
E. all of these are correct

17. Which hardwood tree species would be identified as having alternate, simple, and double toothed leaves with unequal leaf bases?
A. Hackberry (*Celtis occidentalis*)
B. American Elm (*Ulmus americana*)
C. American Basswood (*Tilia americana*)
D. all of these are correct

18. Common landscape ash trees affected by the Emerald ash borer in the Midwest include all of the following except _____.
A. Green ash (*Fraxinus pennsylvanica*)
B. Black ash (*Fraxinus nigra*)
C. White ash (Fraxinus americana)
D. Mountain ash (*Sorbus americana*)

19. Which forest nesting bird is known for erecting and maintaining its large stick nest high in the canopy of trees and returns to and improves upon this nest annually?
A. Baltimore oriole
B. Black-capped chickadee
C. Red-tailed hawk
D. Wild turkey

20. Your team has been asked to select a listing of five native soft mast producing woody plants that will meet all of the following criteria:

-Includes at least one of each of the following: vine, shrub, small tree and larger tree;
-All are considered to be a highly preferred value as a food source for birds;
-Includes a mixture of species that will provide an abundance of mast availability from June through September;
-Includes only native species, with no exotic species.

Which of the following listings of woody plant species will meet all of the above criteria?
(See Table 1 on the following page)
A. Greenbriers, Gooseberries, Hawthorns, Hackberry, and Crabapple
B. Virginia Creeper, Raspberries, Dogwoods, Elderberry, and White Mulberry
C. Honeysuckles, Raspberries, Cherry and Plum shrubs, June berries, Eastern redcedar
D. Grapes, Raspberries, Cherry trees, June berries, Elderberry
E. Poison Ivy, Roses, Buckthorns, Ground Junipers, and Eastern Redcedar

Table 1: Native soft mast producing woody plants in Iowa forests.

Species/scientific name	Value[1]	Timing of fruit availability[2] (June · July · August · September · Winter)
VINES		
Honeysuckles *Lanicera dioica, L. reticu/ata*	**	
Grapes *Vitis aestivalis, \I. cinerea, \I. riparia, \I. vulpina*	***	
Greenbriers *Smilax tamnoides, S.* spp.	**	
American bittersweet *Celastrus scandens*	*	
Virginia creeper *Parthenacissus quinquefalia, P. vitacea*	***	
Moonseed *Menispermum canadense*	*	
Poison ivy *Toxicadendron radicans*	***	
SHRUBS		
Raspberries, blackberries *Rubus* spp.	***	
Blueberries *Vaccinium angustifalium, \I. myrtillaides*	**	
Gooseberries *Ribes missouriense, R. americanum*	**	
Elderberry *Sambucus canadensis, S. racemasa*	***	
Cherries and plums *Prunus virginiana, P.americana, P.*spp.	***	
Dogwoods *Camus drummandii,* C. *racemasa,* C. spp.	***	
Prickly ash *Zanthaxylum americanum*	*	
Buckthorns *Rhamnus lanceolata*	**	
Viburnums *Viburnum lentaga, \I. rafinesquianum, \I.* spp.	**	
Sumacs *Rhus aromatica, R. g/abra, R.* spp.	*	
Roses *Rosa blanda, R. carolina, R. palustrus, R.* spp.	**	
Canada yew *Taxus canadensis*	**	
Eastern burning bush *Euanymus atropurpureus*	*	
Coralberry *Symphoricarpas arbiculatus*	*	
Winterberries */lex verticillata*	**	
Ground junipers *Juniperus harizonta/is, J. cammunis*	***	
SMALL TREES		
Juneberries *Amelanchierarbarea, A.* spp.	***	
Mulberries *Marus rubra, Morus alba**	***	
Hawthorns *Crataegus mallis,* C. spp.		
Crabapple *Ma/us iaensis, M.* spp.		
Pawpaw *Asimina trilaba*		
TREES		
Cherries *Prunus pennsylvanica, P. serotina*	***	
Eastern redcedar *Juniperus virginiana*	**	
Persimmon *Diospyras virginiana*	*	
Hackberry *Ce/tis accidentalis*	*	

[1]Value as a food source for birds; • =consumed,•• = preferred, "** = highly preferred.

[2]Timing of mast availability. Lighter color indicates increasing or decreasing abundance, darker color indicates peak abundance. Winter column represents fruits that persist on the plant through late fall and winter.

*White mulberry *(Morus alba)* is the only exotic species included in the table. It is mostly naturalized and highly used soft mast.

21. What is the relationship between the five-spotted hawk moth (top picture) and the eastern prairie fringed orchids (bottom picture)? (see pictures below).

A. Members of the sphinx moth family, like the five-spotted hawk moth, lay their eggs on the leaves of the eastern prairie fringed orchids.

B. Members of the sphinx moth family, like the five-spotted hawk moth, are the only organisms that can pollinate the eastern prairie fringed orchids.

C. The larvae from members of the sphinx moth family that include the five-spotted hawk moth, primarily feed on the eastern prairie fringed orchids.

D. Seeds of the eastern prairie fringed orchids are spread by the adult stage of the sphinx moth family, including the five-spotted hawk moth.

E. all of these





22. _____have hollow stems with needle-like hairs that serve as a good deterrent for animal consumption. This plant's epidermal hairs act like hypodermic needles and inject irritating chemicals, which results in a painful itch when touched. (See picture)

A. Jewelweed (Impatiens capensis)
B. Wild parsnip (*Pastinaca sativa*)
C. Poison Ivy (Toxicodendron radicans)
D. Stinging nettles (Urtica dioica)



23. Iowa's twelve native oak species are evenly divided between two groups that include the _____.

A. pin oak group and red oak group
B. red oak group and white oak group
C. swamp oak group and bur oak group
D. white oak group and swamp oak group

24. What tree species tend to thrive on upland North-facing slopes that typically have more moisture and lower temperature as compared to upland South-facing slopes?

A. eastern cottonwoods, silver maples, and willows
B. green ash and boxelder
C. oaks and hickories
D. sugar maple and basswood

25. Forests composed of trees with multiple trunks or stems, as shown in this picture, typically represent _____. (see picture)

A. a more efficient way of planting and producing higher quality trees
B. trees sprouted from the stumps of an original tree that was much larger in diameter
C. a new species of tree that has a multiple trunk growth habit
D. all of the above

