

Princeton Science Olympiad Invitational 2017

Invasive Species

|||ANSWER SHEET|||



School's Name: _____ Team #: _____

Students' Name: _____ & _____

***This answer sheet should contain a total of 8 pages, which includes this cover page.**

*** If you list more answers than what the question part asks for, only the first answer(s) listed will be graded.**

***Remember to write your team number on each page at the right hand, top corner.**

Points (For Office Use Only):

Part 1: _____ / 49

Part 2: _____ / 30

Part 3: _____ / 6

Total: _____ / 85

Team Placement: _____

PART 1:

1. A) This species is the potential host for which virus that had a recent outbreak in the Americas. (1)

B) How did this species arrive in the U.S.? Where did it come from? (2)

C) Why is it difficult to control the population of this species? List two reasons. (1)

2. A) (Circle 1) This species is an: annual biennial perennial plant (1)

B) Why is this species a good source for biofuel? (1)

C) Name 5 instruments that can be made from this plant. (1)

3. A) This species is a euryhaline. Define euryhaline. (1)

B) Some member of this species appears red. Why? (1)

C) What do females of this species use to carry their eggs? Where are the eggs attached to? (2)

4. A) What causes this pattern on the tree? (1)

B) What is the name of the beetle species that transmit this disease? (1)

C) The *Ulmus americana* is a species resistant to this disease. What is another name for this species? *Hint: you have heard this name many times today (2)

5. A) What is the common name of this species? (1)
- B) What is the color of this species' larvae? (1)
- C) A particular type of farmers are annoyed by this pest. Which type? (1)
6. A) What is the order of this species? (1)
- B) When horses consume this plant, what neurological disease does it cause? (1)
- C) What are the effects of winter on this plant? (1)
7. A) What part of a sugar apple is toxic to this species? (1)
- B) What happens to this species' eyes during their pupal stage? (1)
- C) Where did this species originate from? (1)
8. A) What is the common name of this species? (1)
- B) What other species on the invasive species list is a look-alike to this species? Write its common name. (1)
- C) How can you distinguish between the two? (1)
9. A) (Circle all that applies) This species is: Monocot Dicot Angiosperm
Gymnosperm (1)
- B) This species releases allelochemicals. Define allelochemicals. (1)
- C) What organism is directly affected by such allelochemicals? (1)

10. A) This species is a _____ feeder. (1)
- B) The larvae undergo metamorphosis into what? (1)
- C) Which East Asian country is this species native to? (1)
11. A) For what reason are these species cultivated? (1)
- B) Name four countries where this species is cultivated for the reason above. (2)
- C) What adaptation of this species makes it an invasive species? (1)
12. A) What is the subphylum for this species? (1)
- B) What is the ratio of the number of eyes, antenna, and legs of this species? (1)
- C) What is the diet of this species? (1)
13. A) The fruit of this plant is a drupe. What are the anatomical features of a drupe fruit? (1)
- B) What part of this plant can burn the skin on contact? (1)
- C) What is the family of this species? (1)
14. A) Where is this species distributed in the US? (1)
- B) What is the common name of the other look-alike species on the list of invasive species? (1)
- C) There is a beetle that can consume multiple of this species per day as a diet. They both are attracted to the same scent. What is the scientific name of this beetle? (1)

15. A) How was this species introduced into the US? (1)

B) At what time of year does this species produce flowers? (1)

C) You are an expert in invasive species and you were called to investigate the decrease in the amount of water reaching homes and buildings. You attributed this problem to this species. Why? (1)

PART 2:

Write the scientific name for each of the species below (1 pt each, total 30 pts):



1.



2.



3.



4.



5.



6.



7.



8.



9.



10.



11.



12.



13.



14.



15.



16.



17.



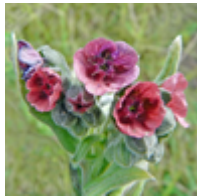
18.



19.



20.



21.



22.



23.



24.



25.



26.



27.



28.



29.

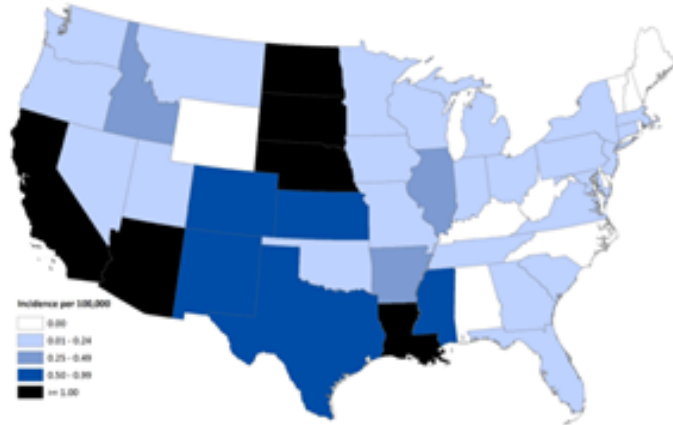


30.

PART 3:

Answer the questions below with as much accuracy and details as you can. The quality of your answer will determine the winner of the tie breaker.

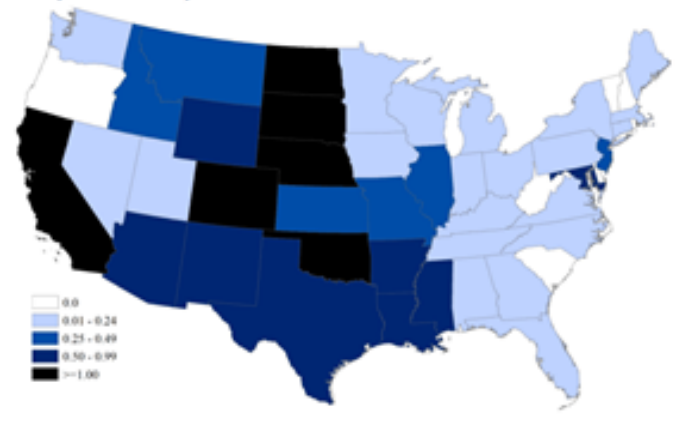
West Nile virus neuroinvasive disease incidence reported to ArboNET, by state, United States, 2014



Source: ArboNET, Arboviral Diseases Branch, Centers for Disease Control and Prevention

West Nile virus neuroinvasive disease incidence maps present data reported by state and local health departments to CDC's ArboNET surveillance system. This map shows the incidence of human neuroinvasive disease (e.g., meningitis, encephalitis, or acute flaccid paralysis) by state for 2014 with shading ranging from 0.01-0.24, 0.25-0.49, 0.50-0.99, and greater than 1.00 per 100,000 population.

West Nile virus neuroinvasive disease incidence reported to ArboNET, by state, United States, 2015



Source: ArboNET, Arboviral Diseases Branch, Centers for Disease Control and Prevention

West Nile virus neuroinvasive disease incidence maps present data reported by state and local health departments to CDC's ArboNET surveillance system. This map shows the incidence of human neuroinvasive disease (e.g., meningitis, encephalitis, or acute flaccid paralysis) by state for 2015 with shading ranging from 0.01-0.24, 0.25-0.49, 0.50-0.99, and greater than 1.00 per 100,000 population.

1. What is the definition of an invasive species? (1)
2. What is the incubation period of this disease in humans? (1)
3. Based on the data given, which states do this disease commonly occur in? (1)
4. What is a vector? What are the binomial nomenclatures for the three vectors that reside in the US for this disease? (2)
5. What are some ways to reduce the chance of infection? (1)