

Answer Key:

Part 1: Bolded words are important key terms that should reside in the answer to earn a point. Half a point can be given if the question has two parts.

***If the test-takers list multiple answers, grade only the first one(s) required by the question**

1. A) **Zika Virus** (1 pt)
B) Arrive in a shipment of **tires** (1 pt)
from Asia (any location from Asia would work) (1 pt)
C) Accept any two of the reasons (0.5 for each correct reason, total 1 pt; if multiple reasons are listed, grade only the first two):
 - Because of the mosquito's ability to adapt to various environments
 - its close contact with humans
 - OR its reproductive biology

2. A) **Perennial** (1 pt)
B) Because of the plant's fast growth and ability to grow in different soils and conditions (1 pt)
C) Flute, pan pipe, clarinet, saxophone, piccolo, bagpipes, oboes, English horn, bassoon, and other woodwind instruments (grade only the first five listed; 0.2 pt for each correct answer, total 1 pt)

3. A) Euryhalines are organisms that can adapt to different level of salinity (1 pt)
B) Delay in molting can cause this crab to turn red (1 pt)
C) The females utilize a **pouch** (1 pt) on the **underside** of the crab (1 pt)

4. A) It is caused by an Ophiostoma fungus infection (1 pt)
B) S. scolytus or elm bark beetle (1 pt)
C) **Princeton** (2 pts)

5. A) **Pink Bollworm** (1 pt)
B) **White** (1 pt)
C) **Cotton Farmers** (1 pt)

6. A) **Asterales** (1 pt)
B) Nigropallidal encephalomalacia (1 pt)
C) Nothing. This plant can survive in the winter. (1 pt)

7. A) The **seed** oil (1 pt)
B) Their eyes turn **red** (1 pt)
C) India or South Asia (1 pt)

8. A) Citrus Longhorn Beetle (1 pt)
B) Asian Longhorn Beetle (1 pt)
C) There are **bumps** present on the back of the citrus longhorn beetles (1 pt)

9. A) **Dicot, Angiosperm** (1 pt)
B) Chemicals that interferes with the growth, reproduction, and survival of other organism (1 pt)
C) Mycorrhizae **fungi** (1 pt)
10. A) Suspension or filter (1 pt)
B) A **zooid** (1 pt)
C) Japan (1 pt)
11. A) It is cultivated to be eaten as a vegetable (1 pt)
B) US, China, Laos, Vietnam, Thailand, Burma, Malasia, Indonesia, and The Philippines. East Asian countries would work (grade only the first four listed; 0.5 pts for each correct answer, total 2 pts)
C) The stem of the plant can form **dense mats** that **block the flow of water** (1 pt)
12. A) Crustacea (1 pt)
B) 1:2:4 (1 pt)
C) Planktons (1 pt)
13. A) A drupe has an exocarp, or skin, and a fleshy mesocarp, or inards, with a pit of hardened endocarp with a seed on the inside. (Basic idea of a fleshy outside and a seed on the inside is good) (1 pt)
B) The **sap** (1 pt)
C) Anacardiaceae (1 pt)
14. A) Northern US (1 pt)
B) European Spruce Bark Beetle (1 pt)
C) *Thanasimus formicarius* Linnaeus (1 pt)
15. A) Through **fishing** operations (1 pt)
B) From Summer to Autumn (1 pt; award 0.5 pt if only summer OR autumn is written)
C) Because the curly pondweed **clogged** the pipelines, causing the decrease in water flow rate. (1 pt)

Part 2: (Answers go from left to right, top to bottom)

(0.5 pt for each correct part of the scientific name; **total of 1 pt per question**)

1. *Maconellicoccus hirsutus*
2. *Centaurea stoebe*
3. *Didymosphenia geminata*
4. *Rapana venosa*
5. *Centaurea diffusa*
6. *Pterois volitans*
7. *Ceratocystis fagacearum*
8. *Dreissena bugensis*
9. *Cactoblastis cactorum*
10. *Imperata cylindrica*
11. *Pistia stratiotes*
12. *Scirtothrips dorsalis*
13. *Carduus nutans*
14. *Heracleum mantegazzianum*
15. *Paulownia tomentosa*
16. *Solenopsis invicta*
17. *Alternanthera philoxeroides*
18. *Neogobius melanostomus*
19. *Potamopyrgus antipodarum*
20. *Sorghum halepense*
21. *Cynoglossum officinale*
22. *Agrilus planipennis*
23. *Pueraria montana* var. *lobata* (0.5 pt for *Pueraria montana*; 0.5 pt for var. *lobata*)
24. *Adelges tsugae*
25. *Ficaria verna*
26. *Persicaria perfoliata*
27. *Hydrilla verticillata*
28. *Solanum viarum*
29. *Coptotermes formosanus*
30. *Linaria dalmatica*

Part 3:

1. A non-native, or alien, species to the ecosystem whose introduction causes or is like to cause economic or environmental harm or harm to human health. (1 pt)
2. 2 to 14 days (Any range within this range will do) (1 pt)
3. (.2 points per good states, .1 points per OK states. **Max of 1 point** *For this question, number of states listed does not matter, grade ALL states listed without exceeding max point*)
 - a. Good States: California, North Dakota, South Dakota, Nebraska.
 - b. OK States: Texas, Louisiana, New Mexico, Arizona, Kansas, Arkansas, Colorado, Oklahoma, Mississippi.
4. Vector: An agent that transmit a pathogen onto another species. (1 pt)
Culex pipien, Culex tarsalis, and Culex quinquefasciatus (must list **ALL three** correct vectors to earn a total of 1 pt).
5. (.2 pt for each correct reason; **at max** a total of 1 pt; acceptable reasons include but not limited to):
 - Use insect-repellant when going outdoors
 - wear long sleeve clothing and long pants
 - avoid going outside during mosquito biting hour (from dusk to dawn)
 - install screens on windows and doors
 - reduce the amount of standing water