

Name \_\_\_\_\_

**FES 457/557 - Tree Pests and Disease  
Questions from Exams 2&3, 2008**

**Short answer or fill-in:**

Insert the best term or statement for answering the following questions. Note: up to 5 extra credit points can be earned if answers give more information than required.

1. (3 pt) What is one **symptom** of a white pine weevil problem?

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Why is this a symptom and not a sign?

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2. (4 pt) Describe one aspect of *Pissodes strobi*'s biology that limits its ability to cause damage on white pine. Justify your answer with 1 reason.

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3. (3 pt) What would you recommend to look for to monitor and survey a white pine stand for *Cronartium ribicola*? List at least 3 items:

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4. (3 pt) What is one of the spore stages of *Cronartium ribicola* on white pine?

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What is the function of this spore?

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5. (3 pt) What is one of the spore stages of *Cronartium ribicola* on *Ribes*?

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What is the function of this spore?

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6. (4 pt) Describe one aspect of white pine blister rust that limits its ability to cause damage on white pine in Maine without any help from forest managers. Justify your answer with 1 reason.

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7. (4 pt) Which control strategy do you believe is most effective for limiting damage due to white pine blister rust? Justify your answer with 1 reason.

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8. (3 pt) What are 3 factors that **predispose** white pine to white pine decline?

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9. (4 pt) List 2 reasons why *Cryphonectria parasitica* is considered a super pathogen:

a) \_\_\_\_\_

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b) \_\_\_\_\_

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10. (4 pt) If a landowner wants to help restore American chestnut to the eastern forest, what are 2 recommendations you would give the landowner?

a) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. (2 pt) What is hypovirulence?

\_\_\_\_\_  
\_\_\_\_\_

12. (3 pt) You find a wilting American elm. What would you look for to decide if it is dying from Dutch elm disease or not? (at least 3 items)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

13. (2 pt) What is the role *Ophiostoma nova-ulmi* in disease?

\_\_\_\_\_  
\_\_\_\_\_

14. (2 pt) What is a phytoplasma?

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15. (4 pt) What are two reasons why elm yellows is more difficult to control than Dutch elm disease? Be sure to briefly justify your reason:

a) \_\_\_\_\_

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b) \_\_\_\_\_

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16. (4 pt) Give two reasons why *Lymantria dispar* is capable of explosive population growth in North America. Be sure to briefly justify your answers.

a) \_\_\_\_\_

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b) \_\_\_\_\_

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17. (1 pt) What has evolved in *L. dispar* that ensures that a male will find a female?

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18. (3 pt) What is one situation when you would recommend using a pesticide against the gypsy moth? Be sure to justify.

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19. (5 pt) Describe a scenario in which tree mortality from gypsy moth would be highest.

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20. (4 pt) Thinning a dense stand of oak is recommended by silviculturists to improve oak growth. Can thinning actually result in a stress? Yes No (circle one) Explain your answer:

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21. (2 pt) What are two signs for *Armillaria*?

a) \_\_\_\_\_

b) \_\_\_\_\_

22. (5 pt) Describe a scenario that will maximize the likelihood of fir mortality due to *Choristoneura fumiferana*:

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23. (3 pt) What are two ways to monitor for spruce budworm:

a) \_\_\_\_\_

\_\_\_\_\_

b) \_\_\_\_\_

\_\_\_\_\_

24. (2 pt) *Adelges piceae* is much, much different from the other insects that we have studied. What are two of these unique characteristics?

a) \_\_\_\_\_

\_\_\_\_\_

b) \_\_\_\_\_

\_\_\_\_\_

25. (4 pt) You are a consultant for a landowner in Washington County who is so gleeful that his stand of balsam fir are showing noticeable growth of new shoots after 5 years of declining growth and thinning crowns due to the balsam woolly adelgid. What will you tell this person?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

26. (5 pt) Gypsy moth has defoliated oak in Maine for less than 100 years, and the insect no longer defoliates large areas of trees. Spruce budworm has been in Maine for thousands of years, and evidence indicates that it has repeatedly defoliated and killed balsam fir through much of the state every 60 to 100 years. How is this possible that an exotic insect no longer defoliates trees but a native insect can defoliate and kill millions of acres of balsam fir?

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27. (2 pt) What is one sign of beech bark disease?

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What is one symptom of beech bark disease?

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28. (3 pt) When seeking beech trees resistant to beech bark disease, you should recognize trees that are resistant to which pest organism?

\_\_\_\_\_ . Why this organism? (1 major reason)?

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29. (3 pt) What are two reasons why beech bark disease has remained a major problem in Maine after 70 years?

a) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

30. (3 pt) What are two recommendations you have to reduce the problem with beech bark disease?

a) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

31. (3 pt) Explain why disease is different from pathogen:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

32. (4 pt) *Phaeocryptoptus gaumii* is a native pathogen to North America, but it has become involved in a major problem with plantations. Why did this happen? (2 reasons)

a) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

33. (3 pt) Describe an easy way to diagnose Swiss needle cast:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

34. (3 pt) Which control option do you think is most effective against Swiss needle cast? Explain.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

35. (3 pt) Plants are suppose to make their own food and absorb their own nutrients, but dwarf mistletoe is a parasitic plant. What makes it possible for this plant to be a parasite? (2 items)

a) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

36. (4 pt) Describe a situation where you would expect dwarf mistletoe to have the most severe infection levels (2 items)

a) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

37. (3 pt) What is one control option for dwarf mistletoe? Why is it effective? (1 reason)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

38. (4 pt) Planted loblolly pine grows on sites that are much more productive than its natural sites. How could fusiform rust become more severe in plantations? Both sites can produce nearly pure stands of loblolly pine, so what's the explanation?

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39. (3 pt) What are 3 similarities between fusiform rust and white pine blister rust?

a) \_\_\_\_\_

b) \_\_\_\_\_

c) \_\_\_\_\_

40. (2 pt) What are 2 differences between fusiform rust and white pine blister rust?

a) \_\_\_\_\_

b) \_\_\_\_\_

41. (4 pt) What are 2 reasons why it is critical to have a monitoring program for *Dendroctonus frontalis*? Refer to the life history of the insect.

a) \_\_\_\_\_

\_\_\_\_\_

b) \_\_\_\_\_

\_\_\_\_\_

42. (3 pt) Which control option do you believe is most effective against the southern pine beetle? Explain.

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