

**UC Master Gardener Training Program – Glenn County  
2016 Final Exam**

**Name:** \_\_\_\_\_ **Final score:** \_\_\_\_ /126 \_\_\_\_ %

**Date:** \_\_\_\_\_ **County:** \_\_\_\_\_

**I. Matching, write the letter behind the correct number. Select the best possible match, only one correct answer for each question. (1 pt. each)**

- |                                    |                                                                                                                                                                                   |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A. Anthracnose                     | 1. ____ How some species of turfgrass spread. Seed Germination process.                                                                                                           |
| B. Perennial weeds                 | 2. ____ Nutsedge, dallisgrass, bindweed, oxalis and poison oak                                                                                                                    |
| C. Biological control              | 3. ____ Ulcer-like lesion on the stem, leaf, fruit, or flower of the host plant. Infects ash, elm, oak and sycamore trees and also shrubs. Promoted by moisture during new growth |
| D. Sustainable Landscape Practices | 4. ____ Spotted spurge, crabgrass and annua poa                                                                                                                                   |
| E. Cultural control                | 5. ____ Planting of pest-resistant varieties or species, rotating crops, growing cover crops                                                                                      |
| F. Tillering                       | 6. ____ Grass clippings, fresh weeds, green manures, vegetable and fruit peelings                                                                                                 |
| G. Nitrogen-rich materials         | 7. ____ Protect water and air quality & green waste reduction                                                                                                                     |
| H. Annual weeds                    | 8. ____ The use, preservation, conservation and augmentation of parasites, predators and disease-causing microorganisms to bring about the control of insect pests                |
| I. Dioecious                       | 9. ____ Yellow or dying areas on leaves, stems and fruit. Infected leaves, stems and fruit are covered with whitish-colored mycelium. Thrives under warm, dry conditions.         |
| J. Apical buds                     | 10. ____ Associations between roots and beneficial soil fungi                                                                                                                     |
| K. Cool season vegetables          | 11. ____ Yellow to brown spots on upper leaf surfaces; fuzzy spore growth on lower leaf structure. Requires high relative humidity and cool weather                               |

- |                           |                                                                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L. Monoecious             | 12. ____ When staminate and pistillate flowers occur on separate plants of a species                                                                           |
| M. Mycorrhizae            | 13. ____ When both staminate and pistillate flowers are present on the same plant                                                                              |
| N. Downey mildew          | 14. ____ Grow best and produce the best quality crops when average temperatures are 55 to 75 degrees Fahrenheit. Will tolerate slight frost when mature        |
| O. Warm season vegetables | 15. ____ Buds found at the top of shoots                                                                                                                       |
| P. Powdery mildew         | 16. ____ Grow best and produce the best quality crops when average temperatures are 65 to 95 degrees Fahrenheit. Intolerant to prolonged freezing temperatures |

**II. Fill in the answers (1 pt. each)**

17. Pruning to stimulate growth is called \_\_\_\_\_.
18. \_\_\_\_\_ is the combination of water loss due to transpiration and evaporation.
19. Compression of the soil caused by heavy equipment or human traffic is called \_\_\_\_\_.
20. \_\_\_\_\_ is the change in form that takes place as insects grow from immature to adulthood; egg, larva, pupa and adult.
21. \_\_\_\_\_ cuts in landscape trees create more open natural structure.
22. The four soil components are \_\_\_\_\_.
23. \_\_\_\_\_ are immature stages of grasshoppers and termites.
24. Nutrients in organic fertilizers must be converted to inorganic form before the plants can absorb them. This is called \_\_\_\_\_.
25. Initiation of flowers, specialized vegetative organs or dormancy in response to a specific length of daylight in a 24-hour period is called \_\_\_\_\_.

### III. True or False (1 pt. each)

26. Borers are usually seen on trees, which have already been weakened or injured. T F
27. Pesticides and Herbicides should be stored in a locked cabinet. T F
28. Black spots on roses are typically caused by a fungus. T F
29. Pinnately compound leaves have all the leaflets attached to a central stalk.  
Palmately compound leaves have all the leaflets attached at one point. T F
30. Master Gardeners assist commercial growers with their agricultural questions. T F
31. Landscaping with adapted natives, or climate appropriate plant materials,  
are examples of sustainable landscape practices. T F
32. An application of 20 lbs. per 1000 sq. ft. of a fertilizer labeled 18-6-12  
contains 2.4 lbs. of potassium, 5 lbs. of nitrogen and 1.2 lbs of phosphorus. T F
33. Compost can improve soil structure, water holding capacity and on-site  
composting reduces pollution associated with transporting waste. T F
34. Photosynthesis is the process by which plants transform stored energy into  
solar energy. T F
35. Good crop rotation is growing tomatoes followed by corn followed by legumes. T F
36. The UC Davis Arboretum All-Stars are plants that require high soil moisture  
and are invasive. T F
37. Plants in plastic pots need to be watered less frequently than those in clay pots. T F
38. If grass-cycling is done properly, thatch will *not* be a problem. T F
39. Cutting inside the branch bark ridge or collar when pruning a tree creates a  
larger wound that is difficult to heal and increases the likelihood of decay  
and disease. T F
40. A post-emergent weed control stops weed germination. T F
41. Codling moths affect apples, pears and some walnuts; they can be monitored  
with pheromone traps. T F
42. You should wait until a tree is a mature specimen for structure pruning. T F
43. Mulch can conserve water, prevents soil erosion, cools the soil, and  
suppresses weeds. T F.

44. The most effective time to use a chemical spray to control scale, if it is not applied during the dormant season, is during “crawler” stage and for about a month thereafter. T F
45. Two major differences between termites and winged ants are that termites’ antennae are straighter and their “waists” are thicker than those of ants. T F
46. Fireblight symptoms include blossoms, fruits and young shoots suddenly wilting and turning brown to black with a sticky brown ooze present on in humid weather. T F
47. A cavity in a tree should be filled with concrete to provide support and prevent decay. T F
48. Poor flower production in fruit trees could be due to a lack of enough winter cold to satisfy the trees’ chilling requirements. T F
49. The central leader method of training fruit trees is the most desirable one for peaches and apricots. T F
50. Peach leaf curl is caused by a fungus and can be controlled by the application of Bordeaux spray after leaf drop and just prior to bud swell. T F
51. Clay soil holds more water than other soil textures. T F
52. Peach leaf curl weakens the tree by causing the tree to use nutrient reserves to push a second set of leaves. T F
53. Clay soil can benefit from the addition of organic matter. T F
54. Pocket gophers create mounds that are often crescent shaped with dirt plugging the opening while moles produce mounds shaped like a volcano. T F
55. (8 pts) The eight Principles of Sustainable Landscaping as presented in the class by Missy Gable are:

- |          |          |
|----------|----------|
| 1. _____ | 5. _____ |
| 2. _____ | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |

**IV. Multiple Choice (circle the appropriate letter) (1 pt. each)**

56. Which is the most effective non-chemical way to control snails?
- a. commercial snail bait
  - b. trapping under boards or flower pots
  - c. cats or dogs
  - d. moles
57. An example of Brassica
- a. cauliflower
  - b. beet
  - c. squash
  - d. carrot
58. pH defines the
- a. fertilizer application rate
  - b. amount of clay or sand in soils
  - c. density of soil
  - d. relative acidity or alkalinity of soil
59. An example of a cool season turfgrass is
- a. Bermuda grass
  - b. turf-type tall fescue
  - c. zoysia grass
  - d. buffalo grass
60. A chemical produced by an animal to attract other animals of the same species is
- a. post-emergent
  - b. pheromone
  - c. glyphosate
  - d. pre-emergent
61. To maximize the benefits of soil solarization one should
- a. apply when soil is moist
  - b. use transparent polyethylene for four to six weeks in the warmest weather
  - c. remove weeds and debris so plastic can lie as flat as possible
  - d. all of the above
62. Plants absorb water and nutrients through
- a. root hairs
  - b. cotyledons
  - c. apical meristems
  - d. xylem tissue

63. Phytophthora root rot is caused by
- a. soil borne bacteria
  - b. a fungus that thrives in heavy, poorly drained soils
  - c. nematodes spreading the pathogen from plant to plant
64. Blossom end rot of tomato plants is associated with
- a. excess calcium
  - b. flock of seagulls
  - c. water mold fungi
  - d. fluctuations in soil moisture
65. A sample of a tomato plant is brought to you at the desk in June. The plant is stunted and has pale green leaves. The gardener explains that his watering and fertilization is the same as last year when his tomatoes grew well. He mentions that he improved his soil in April just before planting by adding fresh rice hulls and redwood compost. What is a probable reason for the poor growth?
- a. nitrogen deficiency
  - b. potassium deficiency
  - c. Verticillium wilt
66. You should plant a tree higher than the surrounding soil because:
- a. it helps avoid crown and root rot problems and allows for settling
  - b. it looks better and saves money on soil amendments
  - c. it helps avoid sunburn and windburn
  - d. none of these
67. As a Master Gardener and a representative of the University of California Cooperative Extension, your approach when giving advice on controlling insects should be to
- a. suggest that a chemical insecticide is the best solution to every pest problem
  - b. recommend that all chemical insecticides are ultimately extremely hazardous and must be avoided
  - c. provide a choice of methods of control and allow the gardener to make the decision
68. Which of the following could be added to the soil to make it more alkaline?
- a. compost
  - b. pine needles
  - c. lime
  - d. aluminum sulfate
  - e. sulfur
  - f. ammonium sulfate

69. VFN on the label of a tomato plant means the plant is resistant to, among other things

- a. fireblight
- b. Nerium
- c. Verticillium wilt
- d. Florence wilt

70. Nearly all lawn diseases are caused by

- a. fungi
- b. virus
- c. bacteria
- d. possums

71. A caller has aphids on her broccoli and doesn't want to use chemicals. Which of the following is the most effective?

- a. marigolds next to broccoli
- b. row covers put on immediately
- c. mulching
- d. strong spray of water

72. Which of the following is *not* a benefit associated with integrated pest management:

- a. more reliable and effective pest control
- b. reduction in the use of the most hazardous pesticides
- c. lessening the chance of pesticide resistance developing
- d. total elimination of pest species.

73. (6 pts.) Designate which of these types of damage to plants would be caused by insects with chewing mouthpieces and which would be caused by insects with piercing/sucking

mouthparts:

- a. Holes in leaves \_\_\_\_\_
- b. Honeydew present \_\_\_\_\_
- c. Yellowing of leaves \_\_\_\_\_
- d. Holes in fruit \_\_\_\_\_
- e. Distortion of fruit with no scabs \_\_\_\_\_
- f. Transmission of virus diseases \_\_\_\_\_

74. The "disease triangle" relates to what three things?

- a. an area near Bermuda Island, airplanes, darkness.
- b. host, pathogen, environment
- c. fungicide, water, timing
- d. infection, spread, symptoms

75. As a UCCE Master Gardener, you must \_\_\_\_\_ before starting an educational activity.

- a. obtain approval from the MG Program Rep. or Farm Advisor.
- b. ask your mother
- c. talk to the Ag Commissioner

d. ask the UCCE secretary

76. Which of the following information is required is required by law to be included on a California pesticide label.

- a. Signal word to alert the user to the acute toxicity of the pesticide.
- b. Active ingredients chemical name.
- c. Recommendation for protective clothing and equipment.
- d. Procedures to prevent hazards to the environment and wildlife.
- e. Target pest (s).
- f. Plants acceptable for treatment.
- g. All of the above except f.
- h. A-F.

77. (3 pts.) What are the three signal words for indication pesticide toxicity? Write them in the order indicating least toxic (1) to most toxic (3).

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

78. (6 pts.) Match the following groups of plant pathogens with the symptoms they commonly produce on plants:

a. Stems and fruit covered with whitish-colored mycelium, fungus thrives under warm, dry conditions. \_\_\_\_\_ Bacterial blight

b. Causes reddening of inner bark, inner bark has vinegar-like odor, enters via pruning wounds. \_\_\_\_\_ Scab

c. Rapid collapse and death of seedlings. \_\_\_\_\_ Damping off

d. Localized lesions on fruit, leaves, tubers usually raised or sunken and cracked. \_\_\_\_\_ Nematodes

e. Rapid browning of flowers, spreading to leaves, twigs, and branches resulting in their death. Gives scorched appearance. \_\_\_\_\_ Bacterial canker

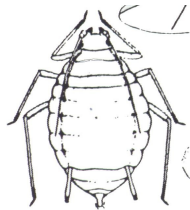
f. Forked, hairy roots of vegetables like carrots. \_\_\_\_\_ Powdery mildew



### V. Essay Questions:

- Please provide detailed answers and also remember to include your reference resources. Resources include your text books, UC IPM websites, etc...

79. (10 pts.) While volunteering in the Master Gardener office, you receive a plant sample from Ms. Rosa. The sample is from a vigorously growing new shoot and is covered with small, green, soft bodied insects. Some of the leaves are curled over. There is a sticky substance dripping from the sample and there are ants present. You pull out your handy-dandy hand lens and get a closer look at the insects. They look like this:



- What is this insect? (2pts.) \_\_\_\_\_
- Draw an arrow to the feature(s) in the drawing above which positively identifies it. (1pt.)
- What order does this insect belong? (1 pt.) \_\_\_\_\_ List 3 ways it can damage plants (of all species, not just this plant). (3 pts.)
  
- Describe a management plan for this insect. What advice would you give Ms. Rosa for control? Include at least 3 control strategies **other** than using pesticides. (3pts.)

References:

(extra space below if needed for question 79)

80. (6 pts.) You are volunteering at a Master Gardener booth at the Glenn County farmers market. A farmer asks you for advice on growing cover crops for her 1000 acres of almonds. What is your advisement?

81.



(7 pts.)

Identify plant/tree (1pt): \_\_\_\_\_

Identify problem (2pts):  
\_\_\_\_\_

➤ See a colored version of the picture above here: <http://ucanr.org/sites/glenmg/>

Describe a management plan to address this problem, including cultural practices (4 pts):

References:

82. (7 pts.)



Identify plant/tree (1pt): \_\_\_\_\_

Identify problem (2pts):  
\_\_\_\_\_

➤ See a colored version of the picture above here: <http://ucanr.org/sites/glenng/>

Describe a management plan to address this problem, including cultural practices (4 pts):

References: