



Oregon State University
Extension Service
Columbia County

2019 OSU MASTER GARDENER™ OPEN BOOK REVIEW

This review is prepared from information included in the Sustainable Gardening Master Gardener™ Handbook. Use the handbook, other reliable references, handouts, your class notes and your own common sense to give the best answer or answers to each question. One hint: the Sustainable Gardening Manual has a great index.

You will find some topics on the test that were not covered in the class. Take a stab at working through the Sustainable Gardening reference book to locate the information. Remember this is a learning exercise and you will be given the best answer(s) during the last class day so that it will be included in your resources.

Note: This “test” will not be graded. You will self-correct your own work.

1. Which of the following products do plants produce or release?

___ a. sugars and starches	___ d. water
___ b. oxygen	___ e. all of the above
___ c. carbon compounds	

2. Describe a circumstance in your garden or landscape where you have seen plant succession.

3. What three basic processes must a plant constantly balance to grow and develop properly?

___ a. perspiration	___ c. photosynthesis
___ b. transpiration	___ d. respiration

4. What primary nutrient produces vegetative growth and is a component of proteins?

___ a. phosphorus	___ c. potassium
___ b. nitrogen	___ d. sulfur

5. A complete fertilizer contains _____
List several ratio examples: _____

6. Give an example of an incomplete fertilizer (ratio): _____

7. As a Master Gardener volunteer for the Extension Service, you are a volunteer for:
- | | |
|---|---|
| <input type="checkbox"/> a. University of Oregon | <input type="checkbox"/> c. Oregon Dept. of Agriculture |
| <input type="checkbox"/> b. Oregon State University | <input type="checkbox"/> d. Garden Club |
8. Insecticidal soap is an innovation in insect control. It must come in contact with the insect in order to cause...
- | | |
|---|---|
| <input type="checkbox"/> a. stomach poison | <input type="checkbox"/> d. ingestion |
| <input type="checkbox"/> b. cuticle damage | <input type="checkbox"/> e. indigestion |
| <input type="checkbox"/> c. smothering action | <input type="checkbox"/> f. clean feet (all six of them!) |
9. Check each of the following factors that are important for good soil structure:
- | | |
|--|--|
| <input type="checkbox"/> a. permeability | <input type="checkbox"/> d. drainage |
| <input type="checkbox"/> b. root penetration | <input type="checkbox"/> e. soil aeration |
| <input type="checkbox"/> c. water-holding capacity | <input type="checkbox"/> f. all of the above |
10. Using a Malling 26 rootstock would result in a fruit tree that is what percentage of the size of a tree on a seedling rootstock...
- | | |
|--|---------------------------------------|
| <input type="checkbox"/> a. 25 % | <input type="checkbox"/> c. 40-50 % |
| <input type="checkbox"/> b. 60 to 75 % | <input type="checkbox"/> d. 25 to 35% |
11. List two problems that occur when you have cold, wet soil:
- a. _____
- b. _____
12. List three ways that you could improve the above soil problem:
- a. _____
- b. _____
- c. _____
13. What condition permits a **bare-root** rose to be dug, transported and replanted without soil around the roots?
- | |
|--|
| <input type="checkbox"/> a. the plant is evergreen and dormant |
| <input type="checkbox"/> b. the plant is dormant and deciduous |
| <input type="checkbox"/> c. the soil is sopping wet |
14. Red thread is:
- | | |
|---|--|
| <input type="checkbox"/> a. a polyester repair fabric | <input type="checkbox"/> c. a fungus disease in lawns |
| <input type="checkbox"/> b. a disease of silk trees | <input type="checkbox"/> d. a bacterial disease in fruit trees |

15. Floating row covers serve which of the following purposes?
- | | |
|---|---|
| <input type="checkbox"/> a. screen out flying insects | <input type="checkbox"/> d. help vegetables get off to an earlier start |
| <input type="checkbox"/> b. dress up the yard | <input type="checkbox"/> e. float above poorly drained areas of garden |
| <input type="checkbox"/> c. warm the environment for the young seedling | |
16. The insect **most** responsible for damaging stored clothing is:
- | | |
|---|--|
| <input type="checkbox"/> a. Indian meal moth | <input type="checkbox"/> d. clothes moth |
| <input type="checkbox"/> b. drugstore beetle | <input type="checkbox"/> e. codling moth |
| <input type="checkbox"/> c. carpet beetle larva | <input type="checkbox"/> f. all of the above |
17. A small cream-colored larva is climbing up your kitchen wall. It is most likely the larva of the:
- | | |
|---|---|
| <input type="checkbox"/> a. codling moth | <input type="checkbox"/> c. Indian or Mediterranean meal moth |
| <input type="checkbox"/> b. a flower moth | <input type="checkbox"/> d. all of the above |
18. The principal function of a leaf is to:
- | |
|--|
| <input type="checkbox"/> a. give a good appearance to the plant |
| <input type="checkbox"/> b. collect water for plant health |
| <input type="checkbox"/> c. absorb light and produce the plant's food, |
| <input type="checkbox"/> d. feed hungry insects |
19. Some leaves of your grapes are distorted, resemble a cupped fan and the main veins are drawn together. What two possibilities might be the problem?
- | | |
|---|---|
| <input type="checkbox"/> a. drought | <input type="checkbox"/> d. herbicide injury |
| <input type="checkbox"/> b. virus disease | <input type="checkbox"/> e. spider mites |
| <input type="checkbox"/> c. insects | <input type="checkbox"/> f. too much fertilizer |
20. Name three insecticides that are not synthetic chemicals: _____,
_____, and _____.
21. Can composted, herbicide-treated grass be used as a mulch on a garden within less than six months of cutting ☐ Yes ☐ No
22. What are two methods of pruning grapes:
_____ and _____.

23. List four reasons why you would want to prune your plants.

24. **Two** situations can cause an iron deficiency symptom on azaleas and rhododendrons. They are:

- ☐ a. a highly acid soil
- ☐ b. sandy soil
- ☐ c. a soil with a pH well above 7
- ☐ d. a source of calcium is nearby

25. Where would the deficiency symptoms in the previous question be found on the rhododendron?

- ☐ a. emphasized in older foliage
- ☐ b. on plant stems
- ☐ c. scattered evenly throughout the plant
- ☐ d. emphasized on newer foliage

26. Why might apples drop from the trees in June?

- ☐ a. too much rain causing weak stems
- ☐ b. blossom end rot from too much calcium
- ☐ c. lack of pollination
- ☐ d. insect infestations

27. Recall the discussion on plant diseases and the triangle that shows the three requirements before a plant disease becomes a problem. The triangle showed you need a susceptible host, a pathogen and the right environment. Pick one of these three and describe what we can most easily do something about in a vegetable or landscape garden?

Suggest three ways we might change this factor:

- a. _____
- b. _____
- c. _____

28. List three activities that count as educational **outreach** on your volunteer log sheet:
_____, _____ and _____.
29. Name three advantages of using fertilizers that release nitrogen slowly:
- a. _____
 - b. _____
 - c. _____
30. In raspberries, what are primocanes and how are the ones produced by July bearing and fall bearing varieties different?
31. Why are symptoms alone frequently inadequate for diagnosing plant problems?
- _____
32. Day Neutral Plants (DNP) flower regardless of photoperiod...such as tomato.
___ True ___ False
33. Two types of grafting are:
34. Your neighbor has asked you to help find the best site in their yard for a vegetable garden. What factors should they take into account?
- _____

35. Rose powdery mildew, peach leaf curl on peaches and Hawthorn leaf spot are examples of what kind of plant disease? _____
36. What is the role of earthworms in the soil food web?
- _____

37. Match the minimum soil temperatures (°F) for each vegetable:

- | | |
|-------------------|-----------|
| ___ cabbage | a. 60-65° |
| ___ potato tubers | b. 50-55° |
| ___ eggplant | c. 48-50° |
| ___ tomatoes | d. 38-40° |
| ___ peppers | e. 39-41° |
| ___ onion | f. 55-60° |
| ___ radishes | g. 34-36° |



Most prefer much warmer temperatures. Take one of these crops and find the preferred temperature:

38. Short-Day plants (SDP) flower when the photoperiod is equal to or longer than the critical day length such as poinsettia, chrysanthemum and Christmas cactus.

___ True ___ False

39. Cabbages that developed poor heads could have been affected by which factors:

- ___ a. planting during the wrong phase of the moon
- ___ b. spraying with too much insecticide
- ___ c. soil allowed to get too dry
- ___ d. poor seedbed preparation and thinning
- ___ e. improper soil temperature
- ___ f. using wrong variety for PNW

40. Tree limbs should be pruned back to;

- | | |
|------------------------------|---------------------|
| ___ a. flush with the trunk | ___ c. a short stub |
| ___ b. flush with the collar | ___ d. three feet |

41. To raise the soil pH and provide the nutrient magnesium at the same time, which of the following would you use?

- | | |
|--------------------------|----------------------|
| ___ a. epsom salts | ___ c. gypsum |
| ___ b. agricultural lime | ___ d. dolomite lime |

42. A plant that requires 2 years to complete its life cycle is a biennial.

Name two biennial weeds and two biennial vegetables or flowers:

Weeds: _____.

Vegetables or flowers: _____.

43. Pesticides (organic or conventional) are grouped into types according to what plant problem they help manage. Name four distinct plant problems and the pesticide types a gardener might use for each: _____

44. Match the disease causal agents with their method of spreading around the yard:

- | | |
|---------------------------|------------------------|
| ___ a. fungus diseases | 1. single cells, slime |
| ___ b. bacterial diseases | 2. particles, touching |
| ___ c. virus diseases | 3. spores, water |

45. If you must use a crop protection product (organic or synthetic) how do you choose it?

_____ How do you apply it? _____
_____ and _____

46. Name the two kinds of termites found in Oregon:

_____ and _____

47. It is necessary to apply wound paint when cuts are more than 1" in diameter.

___ True ___ False

48. A major problem encountered when planting container-grown woody ornamentals in the landscape is:

- | | |
|---|--------------------------|
| ___ a. getting the pot off the roots | ___ c. pruning the tops |
| ___ b. spreading the root system properly | ___ d. none of the above |

49. The basic principles of plant disease control are: _____, _____,
_____ and _____.

50. Are lichen and moss parasitic? _____ Yes or _____ No



You are half way there.....keep up the good work!

51. Name six commonly seen members of the insect order Coleoptera:

- | | |
|----------|----------|
| a. _____ | e. _____ |
| b. _____ | f. _____ |
| c. _____ | g. _____ |

52. Based on plant life cycles, match the statements below;

- | | |
|------------------|------------------------------------|
| ___ a. annual | 1. requires two years to complete |
| ___ b. biennial | 2. lives for more than two years |
| ___ c. perennial | 3. completes its cycle in one year |

53. What are five essentials for houseplant survival?

_____, _____, _____,
_____, _____

54. List three characteristics that distinguish insects from other animals.

_____, _____ and _____.

55. You have received a question about fertilizer application rate, which includes how many pounds per 1,000 square feet to apply. You would find the formula in the following places:
- ☐ a. Chapter 9 of the *Sustainable Gardening Handbook*
 - ☐ b. Chapter 2 of the *Sustainable Gardening Handbook*
 - ☐ c. Soil lecture handouts
 - ☐ d. In both chapters 9 and 2
56. For fast compost, the initial mix should have a balance of air, moisture and food for compost microorganisms. ☐ True ☐ False
57. Name a late season blueberry variety: _____.
58. Are Lapins cherries self-fruitful? ☐ Yes ☐ No
59. If a caller asked for two scab-resistant and powdery-mildew resistant apples, which two could you recommend? _____ and _____.
60. Which feeding method do aphids use (circle one): boring, sucking, or chewing.
61. The residue that would be left from infestations of this type of insect would likely be which one of the following?
- ☐ a. small black pellets
 - ☐ b. sticky residue called "honeydew"
 - ☐ c. large amounts of frass
 - ☐ d. patches of mildew
62. Some weeds produce compounds in their leaves and roots that are harmful to other plants. What is this called? _____
63. What are the major methods of asexual propagation of plants (name 3):
- _____
- _____
- _____
64. Test your garden vocabulary by matching the terms in the second column with the words in the first.
- | | |
|--------------------------------------|--|
| <input type="checkbox"/> monocot | a. condition, full of cell sap |
| <input type="checkbox"/> corolla | b. oxidation of food in a live cell |
| <input type="checkbox"/> chelates | c. cross between two species |
| <input type="checkbox"/> solanaceous | d. having one seed leaf |
| <input type="checkbox"/> stomates | e. petals of a flower, as a group |
| <input type="checkbox"/> respiration | f. specialized group of cells at the plant's growing tip |
| <input type="checkbox"/> turgidity | g. powdery mildew, scab, botrytis |
| <input type="checkbox"/> pH scale | h. exchange carbon dioxide |
| <input type="checkbox"/> hybrid | i. Indicates acid or alkaline soil |
| <input type="checkbox"/> meristem | j. soluble metal organic compound |
| <input type="checkbox"/> fungi | k. tomato, potato, nightshade |

65. Which of the following are the best non-lethal techniques for vertebrate pest management? (Mark all that apply.)
- | | |
|---|---|
| <input type="checkbox"/> a. alter the environment | <input type="checkbox"/> c. just say "no....no" |
| <input type="checkbox"/> b. tighten foundations | <input type="checkbox"/> d. fence crops |
66. Moles eat mostly earthworms, grubs and soil insects. _____ True _____ False
67. Name four general weed control strategies _____,
 _____,
 and _____.
68. In the world of Latin plant names, *Picea* is an example of:
- | | |
|---|--|
| <input type="checkbox"/> a. the species | <input type="checkbox"/> c. the genus |
| <input type="checkbox"/> b. the family | <input type="checkbox"/> d. the cultivar |
69. When is the worst time to do a total lawn renovation?
- | | |
|---|--|
| <input type="checkbox"/> a. late summer | <input type="checkbox"/> c. mid-summer |
| <input type="checkbox"/> b. spring | <input type="checkbox"/> d. early fall |
70. When should July single bearing raspberries be pruned? _____
71. What are the two most common insects to attack rhododendrons?
- | | |
|---|---------------------------------------|
| <input type="checkbox"/> a. lacebug | <input type="checkbox"/> c. punch bug |
| <input type="checkbox"/> b. root weevil | <input type="checkbox"/> d. thrips |
72. If beneficial nematodes are used to control one of the pests in the question above, at what soil temperature should they be applied?
- | |
|-------------------------------------|
| <input type="checkbox"/> a. 45-50 ° |
| <input type="checkbox"/> b. 65° |
| <input type="checkbox"/> c. 34-45° |
73. When should you start thinking about using IPM in your yard?
- | | |
|---|--|
| <input type="checkbox"/> a. as the warm weather begins | <input type="checkbox"/> c. when you see pests |
| <input type="checkbox"/> b. before you choose your plants | <input type="checkbox"/> d. after you read the IPM Chapter |
74. Put the following techniques in order of use in an IPM program.
- | |
|-------------------------------------|
| <input type="checkbox"/> Biological |
| <input type="checkbox"/> Cultural |
| <input type="checkbox"/> Chemical |
| <input type="checkbox"/> Physical |
75. In many cases, insects and diseases are given a "bad rap". Most plant problems are due to **non-living** factors. Name some of these factors:
- _____, _____,
- _____, _____,
- _____.

76. A pesticide with the signal word **CAUTION** would be;
 ___ a. highly toxic ___ c. relatively low toxicity
 ___ b. moderately toxic ___ d. not toxic
77. Is it necessary anymore to sterilize potting mixes before use? Yes ___ No ___
78. Name two manures that should never be used in a compost pile:

79. According to their nutrient needs, beets and spinach are heavy feeders. Name four vegetables that are light feeders: _____,
 _____, _____.
80. Name three vegetables that are soil builders: _____,
 _____, _____.
- How do they build soil? _____.
81. When pruning to maintain plant health, first consider sanitation which includes (3):
 _____, _____ and _____.
82. Major reasons for adding organic matter to soil would be (select 3)
 ___ a. it tends to lower pH
 ___ b. it improves aeration in heavy soils
 ___ c. it improves water holding capacity of sandy soils
 ___ d. it feeds soil micro-organisms
83. What are macronutrients? _____
- Name three: _____, _____, _____
84. What are micronutrients? _____
- Name several: _____
85. Name at least four environmentally sound gardening practices:
 _____, _____,
 _____, _____
86. Name two beneficial insects that help to control pests such as aphids:
 _____ and _____
87. What four environmental factors affect germination? _____,
 _____, _____ and _____.

88. List two organic sources of:
- a. Nitrogen: _____ and _____
 - b. Phosphorus: _____ and _____
 - c. Potassium: _____ and _____
89. Spring flowering shrubs should be pruned:
- ___ a. when they are dormant ___ c. when they are in bloom
 - ___ b. after they have bloomed ___ d. in January
90. Which insect is considered the Pacific Northwest's #1 structural pest?
- ___ a. dampwood termite ___ d. carpenter ant
 - ___ b. German cockroach ___ e. cornfield ant
 - ___ c. subterranean termite ___ f. powderpost beetle
91. Mechanical (non-pesticide) ways of controlling insects and mollusks would include:
- ___ a. handpicking insects from the plants
 - ___ b. placing row covers over the row of beets
 - ___ c. slicing slugs
 - ___ d. using sticky traps
 - ___ e. all of the above
92. One way to begin to identify a carpenter ant is to look to see if:
- ___ a. it is smaller than 1/4 inch
 - ___ b. it has a rounded thorax, 3 body parts and a node between the abdomen & thorax
 - ___ c. has a hammer in its back pocket
 - ___ d. has two body parts with the front smaller than the rear
93. One of the big problems of growing sweet cherries is getting them _____.
Compensation can be made for this by planting varieties that are either _____,
_____ or that can _____ each other.
94. The two types of pruning cuts that one would make on any woody plant are:
_____ and _____.
95. When diagnosing plant problems, first you should learn:
- ___ a. the name of the person bringing it to you
 - ___ b. the location in the yard where it came from
 - ___ c. the name of the plant
 - ___ d. the soil type the plant is growing in

96. Newly transplanted vegetable seedlings should be protected against adverse weather until established. Name four ways to give this protection.
- a. _____
 - b. _____
 - c. _____
 - d. _____
97. When making pesticide recommendations the following resources are approved by the OSU Extension Service Master Gardener™ Program:
- ___ a. Common Sense Pest Control
 - ___ b. PNW Control Handbooks
 - ___ c. Your Sustainable Gardening Manual
 - ___ d. Rodale's Pest Control
98. Which of the following diseases commonly occur in lawns in Western Oregon?
- ___ a. Take-all patch
 - ___ b. Fusarium patch
 - ___ c. Snow mold
 - ___ d. Red Thread
 - ___ e. Necrotic ring spot
 - ___ f. Princess Ring
 - ___ g. All of the above
99. What are the benefits of fertilizing a lawn?
- ___ a. increases lawn's competitiveness with weeds
 - ___ b. proves you read the "what to do this month" OSU garden calendar
 - ___ c. improves lawn's ability to ward off certain diseases
 - ___ d. reduces thatch development
 - ___ e. all of the above
100. Extra credit question: This "Open Book Review" was harder than I thought it would be, but I found many more answers than I thought I could. ____True ____ False

Congratulations, you have just completed the first part of your learning experience with the Master Gardener™ Program. Don't worry if you were not able to answer every question, or even come close. The answers will be reviewed in class and you will know where to look next time. Remember the key to being a good MG is not knowing the answers, but knowing where to look for the answers. As you work as a Master Gardener volunteer this year, you will learn much more than we have taught in the training. You will be able to touch, see, feel and smell out the answers.

We hope that your class experience has been a good one and that during your volunteer service hours you learn even more as you are working with other MGs. Thank you for your participation in our program. We look forward to seeing you at spring and summer projects and events. I have enjoyed every minute with this 2019 St. Helens class! Thank you. ~ Chip

- Chip Bubl, Oregon State University Extension Agent, Columbia County