



Oregon State University
Extension Service
Columbia County

2020 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 either during our virtual group review, by watching a recording of the group review, or by emailing Sonia to request the answer key.

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

<input type="checkbox"/> a. sugars and starches	<input type="checkbox"/> d. water
<input type="checkbox"/> b. oxygen	<input type="checkbox"/> e. all of the above
<input type="checkbox"/> 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?

<input type="checkbox"/> a. perspiration	<input type="checkbox"/> c. photosynthesis
<input type="checkbox"/> b. transpiration	<input type="checkbox"/> d. respiration

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

<input type="checkbox"/> a. phosphorus	<input type="checkbox"/> c. potassium
<input type="checkbox"/> b. nitrogen	<input type="checkbox"/> d. sulfur

5. What is the order, from left to right, of the percentage amounts of the three primary nutrients in a fertilizer bag (organic or conventional)?

List several ratio examples:

6. Give a ratio example of an "incomplete" fertilizer: _____
7. As a Master Gardener volunteer for the Extension Service, you are a volunteer for:
___ a. University of Oregon ___ c. Oregon Dept. of Agriculture
___ b. Oregon State University ___ d. Garden Club
8. Insecticidal soap is an innovation in insect control. It must come in contact with the insect in order to cause...
___ a. stomach poison ___ d. ingestion
___ b. cuticle damage ___ e. indigestion
___ c. smothering action ___ f. clean feet (all six of them!)
9. Check each of the following factors that are important for good soil structure:
___ a. permeability ___ d. drainage
___ b. root penetration ___ e. soil aeration
___ c. water-holding capacity ___ 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...
___ a. 25 % ___ c. 40-50 %
___ b. 60 to 75 % ___ d. 25 to 35%
11. List two plant problems that can 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. How can a **bare-root** rose be dug, stored without soil for months, transported, sold, and replanted successfully?
___ a. the plant is evergreen and dormant
___ b. the plant is dormant and deciduous
___ c. roses are really tough plants

14. Red thread is:
___ a. a polyester repair fabric ___ c. a fungus disease in lawns
___ b. a disease of silk trees ___ d. a bacterial disease in fruit trees
15. Floating row covers serve which of the following purposes?
___ a. screen out flying insects ___ d. help vegetables get off to an earlier start
___ b. dress up the yard ___ e. float above poorly drained areas of garden
___ c. warm the environment for the young seedling
16. The insect **most** responsible for damaging stored clothing is:
___ a. Indian meal moth ___ d. clothes moth
___ b. drugstore beetle ___ e. codling moth
___ c. carpet beetle larva ___ 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:
___ a. codling moth ___ c. Indian or Mediterranean meal moth
___ b. a flower moth ___ d. all of the above
18. The principal function of a leaf is to:
___ a. give a good appearance to the plant
___ b. collect water for plant health
___ c. absorb light and produce the plant's food,
___ 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?
___ a. drought ___ d. herbicide injury
___ b. virus disease ___ e. spider mites
___ c. insects ___ 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 fruiting 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 requirements and describe how we can reduce a particular disease in a vegetable, fruit tree, 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 signs (vs. 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. 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 protection 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 Lapin 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.)
- ___ a. alter the environment ___ c. just say "no....no"
- ___ b. tighten foundations ___ 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:
- ___ a. the species ___ c. the genus
- ___ b. the family ___ d. the cultivar
69. When is the worst time to do a total lawn renovation?
- ___ a. late summer ___ c. mid-summer
- ___ b. spring ___ d. early fall
70. When should mock orange shrubs be pruned? _____
71. What are the two most common insects to attack rhododendrons?
- ___ a. lacebug ___ c. punch bug
- ___ b. root weevil ___ 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?
- ___ a. 45-50 °
- ___ b. 65°
- ___ c. 34-45°
73. When should you start thinking about using IPM in your yard?
- ___ a. as the warm weather begins ___ c. when you see pests
- ___ b. before you choose your plants ___ d. after you read the IPM Chapter
74. Put the following techniques in order of use in an IPM program.
- ___ Biological
- ___ Cultural
- ___ Chemical
- ___ Physical
75. In many cases, insects and diseases are given a "bad rap". Many 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 two vegetables that add nitrogen to the 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 four: _____,
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
 - ___ b. after they have bloomed
 - ___ c. when they are in bloom
 - ___ d. in January
90. Which insect is considered the Pacific Northwest's #1 structural pest?
- ___ a. dampwood termite
 - ___ b. German cockroach
 - ___ c. subterranean termite
 - ___ d. carpenter ant
 - ___ e. cornfield ant
 - ___ 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 plant
 - ___ b. the location in the yard where it came from
 - ___ c. the signs and symptoms they are seeing
 - ___ 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 2020 St. Helens class! Thank you. ~ Chip

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