

**I. Single-Answer Multiple Choice** (2 points each): Circle the **one** solution that answers each question or completes each sentence.

1. The WSU Compost Facility
  - a. manages much of the university's organic waste stream.
  - b. began operations in the mid-1990s.
  - c. composts its organic materials on an asphalt surface.
  - d. **all of the above.**
  - e. both a and c.
  
2. While Cuba has 2% of the population in Latin America, it has \_\_\_\_\_ of the scientists.
  - a. 2%
  - b. 4%
  - c. 7%
  - d. **11%**
  
3. The dominant organic material added to the standard mixture at the WSU Compost Facility is
  - a. coal ash.
  - b. yard waste.
  - c. food waste.
  - d. **animal manure and bedding.**
  - e. shredded wood waste.
  
4. One of the main materials the WSU Compost Facility used to compost (and that saved the university a lot of money in not taking it to the landfill) but no longer does is
  - a. **coal ash.**
  - b. yard waste.
  - c. food waste.
  - d. animal manure and bedding.
  - e. shredded wood waste.
  
5. \_\_\_\_\_ (also known as "first milk") is a form of milk produced by the mammary glands of mammals beginning during pregnancy and continuing through the early days of breastfeeding. It is low in fat, and high in carbohydrates, protein, and antibodies to help keep babies healthy.
  - a. Resveratrol
  - b. Antigen
  - c. **Colostrum**
  - d. Red yeast rice
  - e. Capra
  
6. In 1990, things changed for Cuba when it could not import all the oil and agrochemicals from
  - a. the United States.
  - b. China.
  - c. Europe.
  - d. **the Soviet Union.**

7. Concerning composting,
- turning the compost pile stimulates decomposition.
  - both oxygen and water are needed to compost efficiently.
  - composting is also called microbe farming.
  - all of the above.**
  - both a and c.
8. According to the film we saw on Cuba, the ultimate oil peak (when half of all the oil is used up) will occur in
- 2010.**
  - 2020.
  - 2030.
  - 2050.
9. An example of a chemical weed spray in a certified organic system is
- clove oil.
  - vinegar.
  - 2,4-D.
  - all of the above.
  - both a and b.**
10. One characteristic of an effective biocontrol agent is
- low reproductive rate relative to the prey.
  - tolerance of environmental conditions
  - a high degree of prey specificity.
  - all of the above.
  - both b and c.**
11. There are three types of biocontrol which include
- classical.
  - augmentative.
  - conservation.
  - all of the above.**
  - both a and c.
12. An advantage of “soft” pesticides is that they
- are more pest specific.
  - can be a ticket off the “pesticide treadmill”.
  - kill pests but leave beneficial bugs.
  - all of the above.**
  - both a and b.
13. Tactics of weed control in organic farming systems include
- scouting.
  - chemical control.
  - biological control.
  - all of the above.**
  - both a and c.

14. An advantage of producing seedlings in a greenhouse compared to direct seeding them in the garden is that
- it extends the growing season.
  - environmental conditions can be better controlled.
  - a lot of plants can be managed in a small place.
  - all of the above.**
  - both a and c.
15. On a per capita basis, more fossil fuels are used for
- the automobile.
  - the house.
  - food production.**
16. A breeding strategy used at WSU for improving wheat varieties for organic farming systems is to
- evaluate historical varieties adapted to the Pacific Northwest.
  - utilize farmer knowledge.
  - look carefully at all generations of wheat varieties being produced.
  - all of the above.**
  - both a and b.
17. Concerning wheat in the Palouse,
- the content of most minerals has increased in modern varieties compared to historical varieties.
  - the development of perennial wheat could help reduce erosion in the Palouse.
  - one objective of wheat breeders is to breed wheat varieties with higher yields.
  - all of the above.
  - both b and c.**
18. Mechanical methods of weed control include
- tillage.
  - flooding.
  - mowing.
  - all of the above.**
  - both a and b.
19. Cultural practices used in organic weed control include
- crop rotation.**
  - mowing.
  - burning.
  - all of the above.
  - both a and c.
20. A Harris poll in 2007 found that \_\_\_\_ percent of Americans buy organic food at least on occasion.
- 10
  - 20
  - 30**
  - 50
  - 75

**II. Multiple-Answer Multiple Choice** (1 point for each answer): Each problem set below consists of one problem with four possible answers. At least one answer listed is correct but two, three, or four of the answers may be correct. Mark “T” (for true) for each answer that solves the problem correctly and “F” (for false) for each answer that is incorrect.

21-24. Concerning the WSU Compost Facility,

- 21. **water trying to run off the facility is diverted by dikes and collected in retention ponds.**
- 22. **run-on water to the facility is prevented.**
- 23. materials are composted in rows for about 16 to 20 weeks.
- 24. **compost is cured in static piles for 4 to 5 weeks after it has been composted in rows.**

25-28. Concerning weed control management,

- 25. **it's best to use weed-free crop seed.**
- 26. **it's smart to know that weed seeds can emerge at different depths for different weeds.**
- 27. **it's best if one does not let weeds come in on equipment.**
- 28. **it's best if one avoids letting weeds go to seed.**

29-32. Concerning food and health,

- 29. **Americans get more calories from soft drinks than vegetables.**
- 30. one-half of adults in the U.S. are now obese.
- 31. **if Americans ate less food and a more plant-based diet, greenhouse gases would decline.**
- 32. when buying organic, one is usually buying locally produced food.

33-36. The WSU Compost Facility

- 33. sells compost directly to anybody in the Pullman-Moscow communities.
- 34. accepts organic wastes, such as lawn clippings, from the Pullman-Moscow communities.
- 35. **tests different batches of its finished compost regularly.**
- 36. **makes compost for the WSU Organic Farm.**

37-40. Finished WSU compost is

- 37. **used on WSU research farms.**
- 38. **used as animal bedding.**
- 39. **sold wholesale to local nurseries.**
- 40. **a good long-term fertilizer.**

41-44. Concerning nutrients in food,

- 41. **nutrient density for some minerals and vitamins in garden crops declined from 1950 to 1999.**
- 42. Phytonutrients are non-essential, yet beneficial, plant-derived compounds that can protect against disease.
- 43. **With breeding for larger-sized fruit, data have shown a decrease in phenolics and antioxidants as fruit has gotten larger.**
- 44. **One study showed a greater reduction in cancerous cell growth with organic strawberries compared to conventional strawberries.**

45-48. After 1990 when Cuba was forced to begin a period of survival agriculture,

\_\_\_ 45. **Cubans started gardens in vacant lots in cities.**

\_\_\_ 46. **Cubans grew food in gardens on rooftops.**

\_\_\_ 47. **in the next year each Cuban lost on average 20 pounds.**

\_\_\_ 48. **Cuba began to develop biopesticides and biofertilizers.**

49-52. According to the film we saw on Cuba,

\_\_\_ 49. the average Cuban now uses about the same amount of energy as the average American.

\_\_\_ 50. **Cubans eat more vegetables now than they did in the 1980s.**

\_\_\_ 51. **the life expectancy of a Cuban is about the same as that of an American.**

\_\_\_ 52. **Cuba is a low-input country with relatively little coming in from the outside world.**

53-56. Concerning studies comparing organic and conventional foods,

\_\_\_ 53. the data lean more toward conventionally produced foods being more nutritious.

\_\_\_ 54. **strawberry studies showed higher vitamin C and phenolics in organic strawberries.**

\_\_\_ 55. **more testing needs to be done to draw stronger conclusions.**

\_\_\_ 56. **regardless of differences, Americans need to eat more fruit and vegetables.**

57-60. Predators have different characteristics than parasitoids. Predators

\_\_\_ 57. **eat many prey.**

\_\_\_ 58. are often smaller than their prey.

\_\_\_ 59. live within their victim.

\_\_\_ 60. are usually specialists.

61-64. Some of the features of the milk brought in by our guest speaker in the class included

\_\_\_ 61. **the milk being raw.**

\_\_\_ 62. the milk having less than the regular 4% milk fat.

\_\_\_ 63. **the milk being mostly produced from grass-fed pastures.**

\_\_\_ 64. **the milk being organically certified.**

65-68. Use of broad-spectrum insecticides

\_\_\_ 65. is not allowed in organic agriculture.

\_\_\_ 66. only kills pest insects but not beneficial insects.

\_\_\_ 67. **creates conditions of a "pesticide treadmill".**

\_\_\_ 68. **is decreasing due to "scouting" by conventional growers.**

69-72. General characteristics of weeds include

\_\_\_ 69. **high seed output in favorable environmental circumstances.**

\_\_\_ 70. **great longevity of seed.**

\_\_\_ 71. pollination dominately by wild bees.

\_\_\_ 72. **continuous seed production for as long as growing conditions permit.**

73-76. Reasons given by conventional wheat farmers in Washington State for not converting to organic production methods included the following:

\_\_\_\_ 73. **Organic weed control methods are inadequate.**

\_\_\_\_ 74. **Farmers cannot get same yields with organic methods compared to conventional methods.**

\_\_\_\_ 75. **Organic pest and disease control methods are inadequate.**

\_\_\_\_ 76. **Access to organic buyers is limited.**

77-80. In comparing organic and conventional crop yields,

\_\_\_\_ 77. most comparison studies with wheat report higher yields in organic systems.

\_\_\_\_ 78. the highest yielding wheat varieties in conventional systems are also the highest yielding wheat varieties in organic systems.

\_\_\_\_ 79. **similar yields have been shown in apple production systems.**

\_\_\_\_ 80. **a separate breeding program for improving wheat varieties destined for organic agriculture could improve wheat yields in organic systems.**

**III. Fill-Ins** (2 points for each space): Fill-in each space below with the correct word or words.

81. \_\_\_\_\_ kills weeds by an intense heat wave so that plant cells rupture. **Flaming**

82. Some weeds have an underground \_\_\_\_\_ called a rhizome. **stem**

83. The name of the dairy which our guest speaker owned is called \_\_\_\_\_. **Pride and Joy**

84. A strip of \_\_\_\_\_ that serves as a home for beneficial beetles is called a beetle bank. **Plants or vegetation**

85. The use of living organisms or their products to reduce or prevent growth and reproduction of weeds is called \_\_\_\_\_ weed control. **biological**

86. \_\_\_\_\_ eat a single prey species, whereas \_\_\_\_\_ tend to eat whatever prey they can catch. **Specialists or parasitoids; generalists or predators**

87. Cultural weed control utilizes practices common to good land, crop, and water management. Examples of cultural control practices are the use of smother crops, manipulation of crop row spacing, \_\_\_\_\_, and \_\_\_\_\_. **using crop rotations; using cover crops; maintaining critical weed-free periods; manipulation of crop cultivars and crop populations**

88. Today what percent of Cuba's agriculture is organically managed? \_\_\_\_\_ **80**

89. To calculate if someone is overweight or obese, one needs to use the \_\_\_\_\_ Index. **Body Mass**

90. Who's responsible for the following quote: "Eat food, not too much, mostly plants." \_\_\_\_\_ **Michael Pollan**

91. Essential nutrients are required for normal body function, cannot be synthesized by the body, and must be obtained from the diet. Essential nutrients can be divided into four groups: (1) vitamins, (2) fatty acids, (3) \_\_\_\_\_, and (4) \_\_\_\_\_. **minerals; amino acids**

92. A \_\_\_\_\_ is any plant that is objectionable or interferes with the activities or welfare of humans. **weed**