

Fayetteville-Manlius Invitational
Forestry Key

149pt total

Section 1: (13pt)

1. Descending order: C, D, B, A (4pt)
2. Xylem (1pt)
3. Phloem (1pt)
4. Stele (1pt)
5. Taproot, Fibrous Root (2pt)
6. It is more efficient in extracting water and minerals from soil, more efficient in anchoring plants, more efficient in storing food, resistant to droughts, etc. (1pt)
7. Fibrous Root or Figure F, Taproot or Figure E (2pt)
8. B (1pt)

Section 2: (16pt)

9. B (1pt)
10. A community of trees with mostly uniform characteristics. (1pt)
11. A (1pt)
12. Flexible, should be along the lines of reducing forest debris/humus/logging slash/brush (1pt)
13. Most broadleaves, including Alders, Black Locust, Willows, Chestnuts, Ash, Elm, Oaks (1pt)
14. H (2pt)
15. Descending order: G, G, H, G (4pt)
16. Suppressed: B, D, F, I (2pt)
Intermediate: H (0.5pt)
Codominant: A, C, G, J (2pt)
Dominant: E (0.5pt)

Section 3: (10pt)

17. *Abies lasiocarpa* (1pt)
18. Diameter at breast height (1pt)
19. Cellulose (1pt)
20. Any of the following: Western spruce budworm, western balsam bark beetle, balsam wooly aphid, douglas-fir tussock moth, western blackheaded budworm, fir engraver beetle (1pt)
21. False (1pt)
22. D (1pt)
23. False (1pt)
24. Engelmann Spruce (1pt)
25. No, cold and moist stratification is necessary for germination. (2pt)

Section 4: (9pt)

26. Pignut Hickory (1pt)
27. September-October (1pt)
28. B (1pt)
29. False (1pt)
30. C (1pt)
31. The seeds are unable to germinate until certain environmental conditions are met. (1pt)
32. The seeds overwinter in a moist area, usually the leaf litter on the forest floor but it can be artificially triggered using a simple moist medium. (1pt)
33. Spike, half credit for racemose/indefinite. (1pt)
34. It is large and difficult to transplant. (1pt)

Section 5: (9pt)

35. Slippery Elm (1pt)
36. Refers to mucilaginous/slippery inner bark. (1pt)
37. It grows in moist areas. (1pt)
38. Bark (1pt)
39. Demulcent (relieving inflammation or irritation), anti-diarrheal, anti-cough (1pt)
40. Anemophily (1pt)
41. Negligible to no effect, Slippery Elm is not an important lumber tree. (2pt)
42. Deer tend to strip bark off of saplings and roots. (1pt)

Section 6: (8pt)

- 43. Fraxinus velutina (1pt)
- 44. D (1pt)
- 45. Oregon Ash (1pt)
- 46. Arizona (1pt)
- 47. B (1pt)
- 48. Sunscald or southwest injury (1pt)
- 49. Gold or yellow (1pt)
- 50. Serrate(d) (1pt)

Section 7: (10pt)

- 51. Fremont Cottonwood (1pt)
- 52. John C. Fremont (1pt)
- 53. Area along a river or stream (1pt)
- 54. March and April (2pt)
- 55. B (1pt)
- 56. B (1pt)
- 57. Young has smooth bark, mature has deeply furrowed bark. (2pt)
- 58. They are an obligate seeder, which means that they do not resprout after a fire and rely on seeds to regenerate its population. (1pt)

Section 8: (9pt)

- 59. Tanoak (1pt)
- 60. Notholithocarpus (1pt)
- 61. A much harder and woody shell (1pt)
- 62. It grows as a shrub (1pt)
- 63. CD (1pt)
- 64. Fine hairs (1pt)
- 65. ABC (1pt)
- 66. Low (1pt)
- 67. They are susceptible to predation by many animals (1pt)

Section 9: (11pt)

- 68. *Carpinus caroliniana* (1pt)
- 69. A slim, cylindrical flower cluster (1pt)
- 70. True (1pt)
- 71. D (1pt)
- 72. Any two: tool handles, longbows, walking sticks, golf clubs, mallets (2pt)
- 73. True (1pt)
- 74. Spring is crimson/green, Summer is deep green, Fall is yellow/scarlet (3pt)
- 75. BD (1pt)

Section 10: (9pt)

- 76. Smooth Sumac (1pt)
- 77. True (1pt)
- 78. A swelling external growth on the plant's external tissue (1pt)
- 79. An insect (aphid) (1pt)
- 80. To alleviate thirst (1pt)
- 81. A (1pt)
- 82. Lanceolate (1pt)
- 83. Around a pH of 7 (1pt)
- 84. True (1pt)

Section 11: (13pt)

- 85. *Crataegus douglasii* (1pt)
- 86. The family is Rosaceae, because all pomes are produced by species in the family Rosaceae (2pt)
- 87. Any four: AL, CA, CO, ID, MN, MT, NV, OR, UT, WA, WY (2pt)
- 88. ABCG (2pt)
- 89. To deter animals from eating plant materials (1pt)
- 90. *Crataegus pruinosa* (1pt)
- 91. Thickets of shade-killed branches form below which can form a ladder for the fire (1pt)
- 92. Tree is taller and has one central woody stem, shrubs are shorter and have multiple woody stems, shrub (3pt)

Section 12: (9pt)

- 93. Loblolly Pine (1pt)
- 94. Red Maple (1pt)
- 95. Longest genome of any organism to be fully sequenced (1pt)
- 96. It lacks self-incompatibility (1pt)
- 97. Longleaf Pine (1pt)
- 98. D (1pt)
- 99. 3 (1pt)
- 100. True (1pt)
- 101. Acidic Clay Soil (1pt)

Section 13: (13pt)

- 102. AC (1pt)
- 103. Descending order: BCAD (4pt)
- 104. At higher elevations, soils are less fertile and thus can only support smaller plants (2pt)
- 105. False (1pt)
- 106. In biomass, mostly within trees (1pt)
- 107. Treefall and forest fires (1pt)
- 108. Wood has high amounts of cellulose/lignin which are strongly bonded and decay slowly. (1pt)
- 109. High amounts of moisture, decomposers require water to grow (2pt)

Section 14: (10pt)

- 110. Tree 1: Utah Juniper (*Juniperus osteosperma*) (1pt)
Tree 2: White Spruce (*Picea glauca*) (1pt)
Tree 3: Red Pine (*Pinus resinosa*) (1pt)
Tree 4: American Mountain-ash (*Sorbus americana*) (1pt)
Tree 5: Northern Red Oak (*Quercus rubra*) (1pt)
Tree 6: Sugar Maple (*Acer saccharum*) (1pt)
Tree 7: White Ash (*Fraxinus americana*) (1pt)
- 111. They are simple for many people to figure out, rather than a taxonomically ordered field guide. However, it is difficult to incorporate all taxa into a dichotomous key as there are usually outliers. (2pt)
- 112. Instead of being a downstream flow, multiaccess keys ask several questions at the start in order to suggest potential IDs. (1pt)