

Answer Key

Part A:

1. Cohesion
2. Adhesion
3. Capillary Action
4. B
5. D

6.

- A - Storage in ice and snow
- B - Precipitation
- C - Snowmelt runoff to streams
- D - Infiltration
- E - Groundwater discharge
- F - Groundwater storage
- G - Water storage in oceans
- H - Evaporation

- I - Condensation
- J - Water storage in the atmosphere
- K - Evapotranspiration
- L - Surface runoff
- M - Streamflow
- N - Springs
- O - Freshwater storage
- P - Sublimation

7. D
8. C
9. A
10. B

11. Orthophosphates
12. Particulate
13. Phosphate

14.

1. C
2. E
3. D
4. A
5. B
6. F

15. D
16. B
17. B
18. A
19. Numbers
20. Biomass
21. Water Circulation and Geomorphology
22. Isohalines

23. Transport of organisms, Circulation of nutrients and oxygen, and Transportation of sediments and wastes.

24. Direction and speed of wind (count as 2), shape and volume of estuary (count as 1), flow rate of river water entering the estuary. (only need 3 of the above).

25. Coastal Plain

26. Fjord- Type

27. Tectonic

28. Bar-Built

29. Salt-Wedge

30. Partially-Mixed

31. Well-Mixed

32. Salt-Wedge

33. Partially-Mixed

34. Fjord-Type

35. Asian Tiger Mosquito

36. Asian Carp

37. Purple Loosestrife

38. Aquatic Water Milfoil

39. Water Hyacinth

40. Hydrilla

41. Zebra Mussels

42. Chinese Mitten Crab

43. Population

44. Community

45. Biosphere

46. Ecosystem

47. A directional, cumulative change in the species that occupy a given area, through time.

48. What an organism could do with no competitors or resource limitations but due to competition and resource limitations.

49. The part of the fundamental niche that a species actually occupies in nature.

50. Area covered by water that supports aquatic vegetation.

51. An area of land where water from precipitation drains downhill into a body of water.

52. Eutrophic

53. Oligotrophic

54. Oligotrophic

55. Mesotrophic

56. Oligotrophic

57. Eutrophic

58. Mesotrophic

59. Reduce flooding, improve water quality, enhance habitat, land usage and water treatment methods are important in maintaining water quality in the watershed.

60. Basin wetlands-develop in shallow basins ranging from ups and depressions to lakes and ponds that have filled in.

Riverine wetlands-develop along shallow and periodically flooded banks or rivers and streams.

Fringe Wetlands-Found along coasts of large lakes and seas where rising lake levels or tides cause water to flow back and forth.

61. Scrapers or Grazers, Shredders, Collectors, and Predators.

62. Fall turnover occurs when the upper layer cools to 4C°. Because 4C° water is the densest it sinks to the bottom. Water from the bottom is displaced and rises. Water from the bottom has nutrients dissolved from the bottom of the pond, and it brings nutrients (P, NO₃) to the surface where plants can use them for photosynthesis.

63. The Thermocline or Metalimnion is a narrow, vertical zone between the warmer and colder waters where a rapid temp change occurs. Turbidity determines how far down major heating will occur in summer turnover.

The Epilimnion(warm surface layer) is high enough for the sun to reach this layer and the wind to produce strong currents.

The Hypolimnion (Cold bottom water) does not experience mixing during summer and is the coolest layer. As you travel down in the hypolimnion in a deep lake oxygen levels decrease because dead plants and animals are being decomposed by bacteria.

Part B:

64. Mayfly Nymph; Class 1
65. Riffle Beetle Adult; Class 1
66. Water Boatman Adult; Class 5
67. Predaceous Diving Beetle Larvae; Class 5
68. Deer/Horse Fly Larvae; Class 4
69. Damselfly Nymph; Class 2
70. Midge Adult; Class 3

71. C
72. C
73. D
74. A
75. B
76. B
77. C
78. D
79. B
80. D
81. True
82. False. Replacement: Mosquito to Crane fly.
83. True
84. False. Replacement: Flatworm to Aquatic Sowbug.
85. False. Replacement: Male to Female.

Part C:

86. Thermometer/ Temperature Probe

87. Less

88. Decrease

89. Increases

90. Thermal

91. Neutral

92. 6.5-8.5

93. Hydrogen; Hydroxyl (order matters)

94. Bacteria

95. Logarithmic

96. Secchi

97. Tannins

98. 2 to 3

99. Nephelometric; Jackson (order matters)

100. Cloudiness/ Murkiness/ etc. (accept any synonym)

101. The Atmosphere

102. Altitude

103. Decrease

104. Increase

105. Increase

106. Five

107. Dissolved Oxygen (accept: DO)

108. Increase

109. Increase

110. Degrade/Worsen/etc. (accept any synonym)

111. Cycle

112. Eutrophication

113. Increases

114. Growth-Limiting

115. PO_4^{3-}

116. Ammonia and Nitrates (in any order. Accept: chemical formulas, i.e. NH_3 and NO_3)

117. Ammonia, Nitrates, and Nitrites (in any order. Accept: chemical formulas, i.e. NH_3 , NO_3 , and NO_2)

118. Protein

119. Nitrosomonas

120. Denitrification

121. Suspended

122. Dissolved

123. Dissolved

124. Turbidity

125. Suspended

126. Intestines

127. 100 (one hundred)

128. Increase

129. Typhoid

130. Leaky/ malfunctioned/ failing (or any synonym)

131. Salinity

132. Fluoride/ Fluorine

133. Chlorophyll/ Algae