

1) 3 2) 2 3) 4 4) 1 5) 2

6) 3 7) 4 8) 1

9) SAMPLE ANSWER: The amount of glucose produced varies as the environmental temperature changes.

10) SAMPLE ANSWERS: The enzymes responsible for the process are less effective above 30°C. OR Chemical reactions are affected by temperature. OR The enzymes are altered (or destroyed) by heat.

11) 3 12) 2 13) 1 14) 3 15) 4

16) 2 17) 3 18) 1 19) 4 20) 4

21) 2 22) 2 23) 1 24) 3 25) 4

26) 3 27) 2 28) 2 29) 4 30) 2

31) 4 32) 4 33) 3 34) 1 35) 3

36) 4 37) 1 38) 1 39) 3 40) 2

41) 4 42) 2 43) 2

44) SAMPLE ANSWERS: parasite/host (parasitic) OR pathogen/host (pathogenic)

45) SAMPLE ANSWERS: Oxygen is given off by plants and used by animals (plants and/or decomposers). OR Oxygen is given off as a result of photosynthesis and used for respiration.

46) SAMPLE ANSWERS: Fish release CO₂ OR Fish release nitrogenous waste products.

47) SAMPLE ANSWERS: dead animals (or plants) OR wastes of the organisms

48) SAMPLE ANSWERS: Decomposers return basic materials such as nitrates and carbon dioxide to the ecosystem for reuse by other organisms. OR Decomposers recycle nutrients.

49) SAMPLE ANSWERS: Relocated squirrels compete with park squirrels for food or space or mates. OR Relocated squirrels can mate with park squirrels.

50) SAMPLE ANSWERS: The soil will be enriched by added wastes. OR Relocated squirrels will use water. OR Relocated squirrels will take up space.

51) SAMPLE ANSWERS: Predators will eat the squirrels. OR Competition with other gray squirrels will keep the population from increasing. OR spread of disease because of denser population

52) SAMPLE ANSWERS:

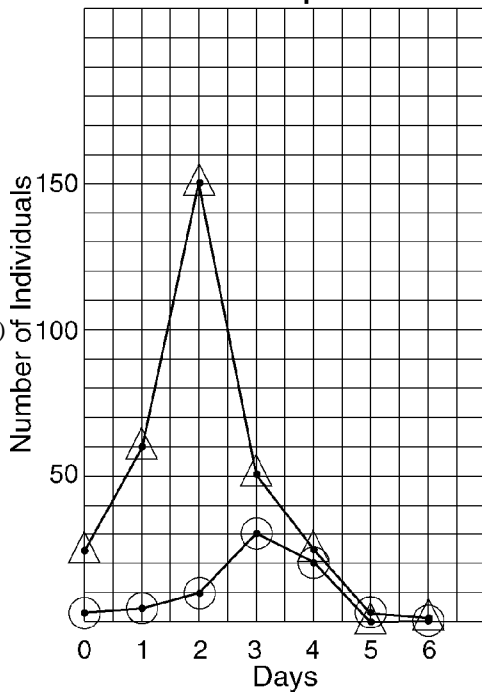
(a) As the beaver population increases, the number of aspen trees decreases.;

(b) The beavers use the trees for food. OR This occurs because the beavers use the trees for shelter. OR Beavers use the trees to build dams.

53) SAMPLE ANSWERS: The parasite might cause a decrease in the beaver population and there would be more aspen trees. OR The number of aspen trees would increase because the parasites would weaken the beavers. OR The parasite might not affect the beaver population and the number of trees would not change.

54) 3

Culture Population

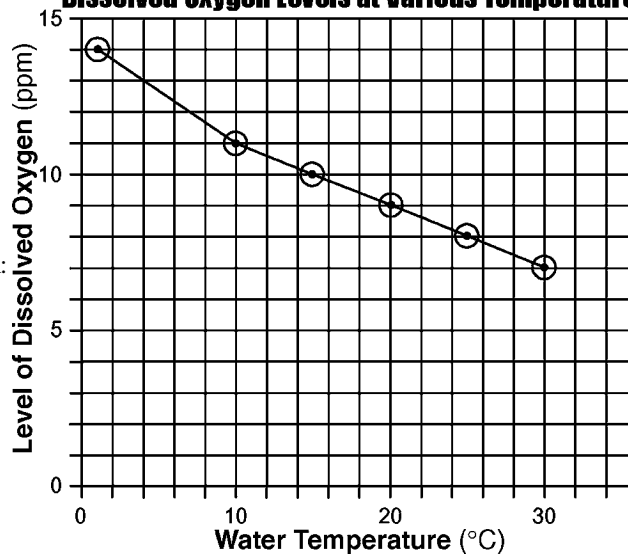


55) (a-b)

56) SAMPLE ANSWERS: Changes in the size of the *Didinium* Population lag behind changes in the *Paramecium* population. OR The predator population is usually smaller than the prey population. OR *Didinium* died out after the *Paramecium*, implying that the *Didinium* ran out of food.

57) SAMPLE ANSWERS: They ran out of food. OR waste buildup OR disease OR not enough oxygen OR no reproduction

Dissolved Oxygen Levels at Various Temperatures



58) SAMPLE ANSWER:

59) 6 ppm (± 0.5 ppm)

60) SAMPLE ANSWERS: As the water temperature rises, the level of dissolved oxygen decreases. OR As the water temperature decreases, the level of dissolved oxygen increases.

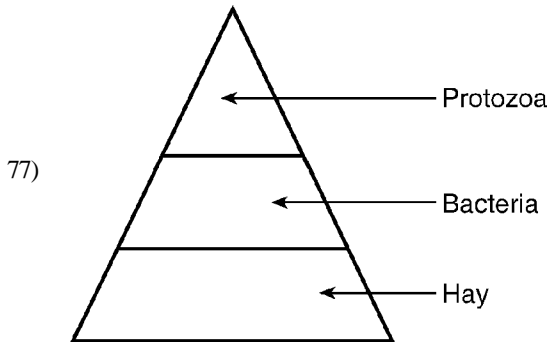
61) SAMPLE ANSWERS: Photosynthesis would increase the level of dissolved oxygen. OR Respiration would decrease the level of dissolved oxygen. OR Decomposition would decrease the level of dissolved oxygen. OR Turbulence of the river water will increase the level of dissolved oxygen.

62) 4 63) 1 64) 1 65) 3

66) SAMPLE ANSWER: The cricket population would decrease.

67) 1 68) 4 69) 1 70) 2 71) 1

72) 4 73) 3 74) 4 75) 3 76) 2



78) 2 79) 4 80) 3 81) 2 82) 4

83) 1 84) 4 85) 3 86) 1 87) 2

88) 2 89) 1 90) 1 91) 2 92) 1

93) 4 94) 3

95) SAMPLE ANSWER: recycle nutrients

96) SAMPLE ANSWER: The grasses and shrubs produce the food which is then transferred to other members of the food web. OR Grasses and shrubs are not consumers. OR They don't eat other members of the food web. OR Arrows show the direction of energy flow. OR Arrows point to organisms that eat them.

97) SAMPLE ANSWERS: The hawk population will decrease because there will be fewer snakes since there are fewer frogs for them to eat. OR The hawk population will increase because there will be more grasshoppers for the shrews to eat and more shrews for the hawks to eat.

98) SAMPLE ANSWERS: chloroplast OR cell wall

99) rabbit and deer
SAMPLE ANSWER: They have fewer predators.

100) SAMPLE ANSWERS: Their grain crops decreased. OR Fewer cattle were killed.

101) SAMPLE ANSWERS: decomposition OR decay OR recycling

102) SAMPLE ANSWERS: decomposer/bacteria OR small fish OR seagulls OR green plant

103) SAMPLE ANSWERS: nitrogen compounds OR phosphorus compounds OR carbon compounds

104) SAMPLE ANSWERS: Fishing deprives upstream ecosystems of nutrients. OR Consumers in the ecosystem would be deprived of food. OR Decomposer populations would decrease. OR disrupts food webs

105) SAMPLE ANSWERS: A plant-rich diet would contain less pesticide than an animal-rich diet because producers contain less pesticide than consumers. OR A plant-rich diet is better because plants have lower concentrations of pesticides than animals.

106) 4 107) 2 108) 2 109) 3 110) 4

- 111) 1
- 112) SAMPLE ANSWERS: plant OR cattail OR pond lily OR producers OR autotrophs
- 113) SAMPLE ANSWERS: frog/insect OR big fish/little fish OR fish/crayfish OR duck or goose/frog OR duck or goose/insect
- 114) SAMPLE ANSWERS: There are plants growing on the lake bottom. OR Plants are living in the deepest part of the lake.
- 115) SAMPLE ANSWERS: decomposers OR bacteria OR fungi
- 116) SAMPLE ANSWER: Both of these animals depend on codfish as a source of food.
- 117) small fish
- 118) *A* — sharks, *B* — squid, *C* — small fish, *D* — phytoplankton
- 119) 2 120) 4 121) 4 122) 1 123) 3
- 124) 1 125) 3 126) 3 127) 2 128) 3
- 129) 1 130) 2 131) 4 132) 2 133) 1
- 134) 4 135) 4 136) 2
- 137) ecological succession OR succession
- 138) SAMPLE ANSWERS: The pond will probably be totally filled in. OR It may become a swampy area. OR It may become a forest.
- 139) 1
- 140) SAMPLE ANSWERS: As more soil accumulated (from the decomposition of dead vegetation), plants with deeper root systems could live there and shade out the earlier plants. OR ecological succession
- 141) SAMPLE ANSWERS: cutting the forest OR clearing the land for crops OR controlled burn OR causing forest fires OR pollution
- 142) SAMPLE ANSWERS: The soil depth will increase and trees will be present. OR The soil will change in composition and the plant species will change.