

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

6) 2 7) 4 8) 3 9) 3 10) 2

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

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

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

26) 4 27) 2 28) 4 29) 1 30) 4

31) 3 32) 2 33) 2 34) 4 35) 3

36) 1

37) **SAMPLE ANSWER:** Some medflies have a variation that provides resistance to pesticide. When the pesticide is present, those flies with the favorable variation will survive to reproduce and pass the variation to offspring. A variety of medfly resistant to the pesticide will result.

38) **SAMPLE ANSWERS:**

- (1) A mutation (or genetic change) probably occurred that led to the resistance to the insecticide.
- (2) The percentage of resistant insects in the population has increased over the years because they survived when the insecticide was used, and were then able to reproduce and pass on the resistance.
- (3) release natural predators of the insects OR the release of large numbers of sterile males of insect species that damage fruits OR provide conditions that help predators of the insects live in the area OR genetically engineer insect-resistant plants

39) **SAMPLE ANSWERS:** Organisms with antibiotic resistance would survive and reproduce. Others without resistance would decrease in number. OR Antibiotics target specific bacteria.

40) **SAMPLE ANSWERS:** Mating with another earthworm allows for variety in the species. OR better chances of survival due to variation or genetic recombination

41) **SAMPLE ANSWERS:**

- (1) The hawk with the better eyesight would compete more successfully. OR The hawks with the better eyesight would have a better chance of obtaining food.;
- (2) Individuals with the better-eyesight trait would have a better chance to survive.;
- (3) The frequency of the better-eyesight trait would increase.;
- (4) If the hawks have better eyesight and weak wings, they will not have the same advantage as those with better eyesight and normal wings.

42) 4

43) **SAMPLE ANSWERS:** Some species are better adapted to the environment. OR Some species have a greater ability to compete for food or escape predators or breed. OR natural selection

44) **SAMPLE ANSWERS:** evolution OR meiosis OR sexual reproduction OR recombination during fertilization OR crossing-over OR mutations OR natural selection/isolation

45) 3 46) 2 47) 2 48) 4 49) 1

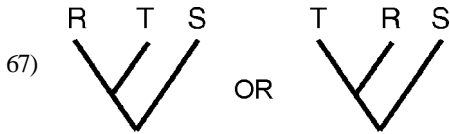
50) 3 51) 4 52) 1

53) **SAMPLE ANSWER:** A and C would probably have the most similar genetic material. A and C have more of the given characteristics in common than any other pair.

54) 2 55) 2 56) 4 57) 3 58) 1

59) 2 60) 3 61) 1 62) 3 63) 2

64) 1 65) 2 66) 1



68) 4 69) 4

70) SAMPLE ANSWERS: The pigeon shares characteristics with all of the other organisms. OR Organisms A and C also lay eggs.

71) 1

72) SAMPLE ANSWERS: Snakes are in their own group, rather than grouped with turtles. OR Turtles are on the same branch as the birds. OR Snakes have one kind of protein that is very different from that found in turtles and birds.

73) The pig is more closely related to the dog than to the kangaroo.
 SAMPLE ANSWERS: separated more recently OR closer together on the tree OR have a more recent common ancestor OR The protein in the pig is more similar to that in the dog.

74) 3 75) 2 76) 3 77) 4 78) 1

79) 4 80) 3 81) 2 82) 4 83) 2

84) 4 85) 2 86) 1 87) 2 88) 3

89) 1 90) 4 91) 1

92) SAMPLE ANSWERS: Beaks would be thicker. OR Birds with larger, thicker beaks would become more common in the population than those with the original beak characteristics.

93) SAMPLE ANSWER: Competition for food would increase as small seeds became scarce. Birds with larger, thicker beaks would have a better chance of surviving when the seeds were larger and tougher to crack. Birds with normal thickness beaks would be less likely to survive. Reproduction of the surviving birds, many with the larger, thicker beaks, would produce more offspring inheriting the better adapted beak type. Over time, this would lead to a large proportion of the population having the thicker beaks.

94) 2

95) SAMPLE ANSWERS: The tools represent types of beaks, some of which are more successful for gathering seeds and so are more favorable for survival. OR Students with favorable “beaks” survived.

96) SAMPLE ANSWERS: strength OR vision OR coordination

97) 4 98) 3

99) SAMPLE ANSWERS: The large tree finch eats mainly animal food, while the large ground finch eats mainly plant food. OR They occupy different environmental niches. OR They eat different kinds of food.

100) SAMPLE ANSWER: The large tree finch is most likely to compete with the small tree finch, because they both eat mainly animal food.

101) SAMPLE ANSWERS: Faster or more aggressive birds get to seeds faster. OR Larger or stronger birds compete successfully. OR Coordination helps an individual avoid predators.

102) SAMPLE ANSWERS: Woodpecker finch: they use the same food resources OR Small tree finch: both eat mainly animal food

- 103) SAMPLE ANSWERS: Medium and large ground finches both have crushing bills and eat plants. OR Small tree finches and large tree finches would compete because both eat mainly animals. OR Large ground finches and sharp-billed ground finches have similar beaks and eat mainly plant food.
- 104) SAMPLE ANSWER: The cactus finch is least likely to compete with the other two for food because it eats mainly plant food, while the other two eat mainly or all animal food.
- 105) 1
- 106) SAMPLE ANSWERS: the presence of wings OR the absence of wings
- 107) SAMPLE ANSWER: The earthworm and jellyfish have all (or the most) observed characteristics in common.
- 108) SAMPLE ANSWERS: They may have a common ancestor. OR Both snakes and fish have similar DNA.
- 109) 4 110) 3 111) 4 112) 3
- 113) SAMPLE ANSWERS: 5.a. has white or clear or light wings AND 5.b. has shaded or black or dark wings

