

Winter 2022 - LIFESCI7B-3 - PHAM / PIRES

Started on Thursday, 3 March 2022, 10:58 AM PST

State Finished

Completed on Thursday, 3 March 2022, 11:25 AM PST

Time taken 27 mins 12 secs

Grade 4.00 out of 6.00 (67%)

Information

[Questions 1–2] You are working with a population of snails. During the mating season, you observe that individuals in the population will only mate with others of the same genotype (for example, Mm individuals will only mate with Mm individuals). There are only two alleles at this locus (M is dominant; m is recessive); you have determined that the frequency of the M allele = 0.5 and that selection acts against heterozygous individuals. Assume the first generation of this population was in HW equilibrium. Consider what will occur in this population over the course of many generations.



Question 1

Incorrect

0.00 points out of 1.00

Allele frequencies will stay the same, but genotype frequencies will change over time.

Select one:

- True
- False ✘

The correct answer is 'True'.

Question 2

Correct

1.00 points out of 1.00

After selection against heterozygotes, and many subsequent generations have occurred, this population will not be in HW equilibrium.

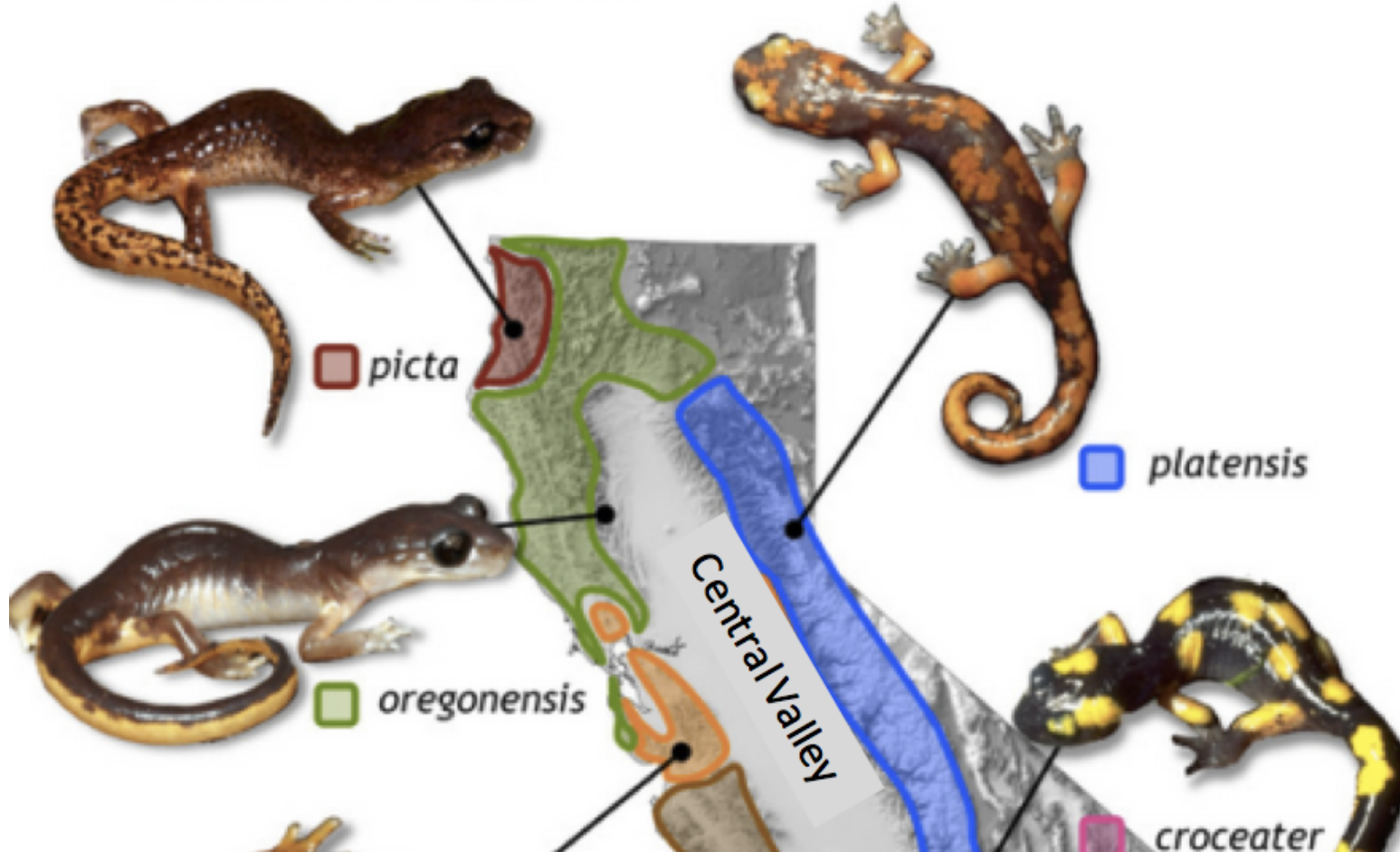
Select one:

- True ✔
- False


The correct answer is 'True'.

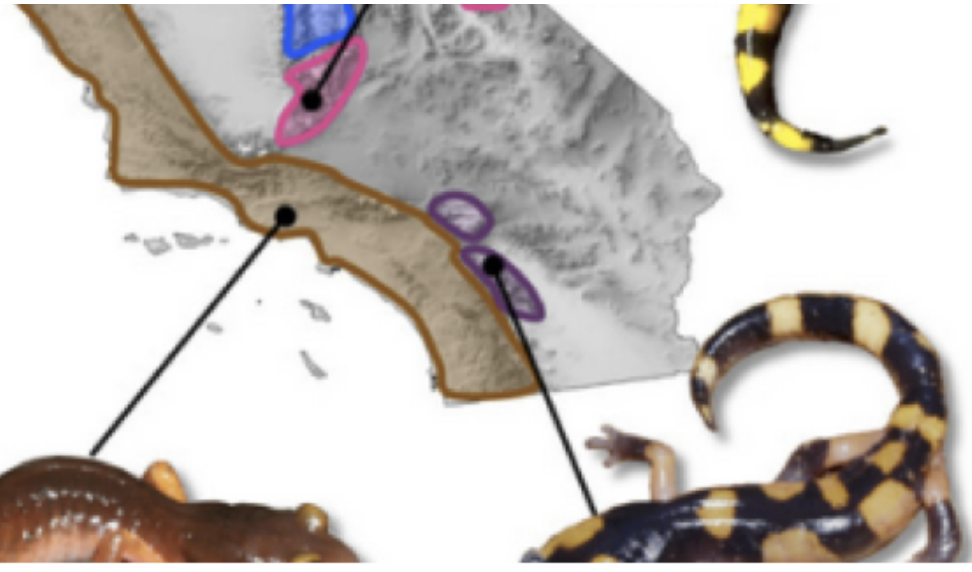


[Questions 3-4] *Ensatina eschscholtzii* are salamanders that originally evolved 21.5 million years ago and currently are distributed throughout California and Southern Oregon. The species consists of multiple neighboring populations represented in the map below. *E. e. oregonensis* first evolved in the north and dispersed south along the Sierra Nevadas (to the east of the Central Valley) and Coastal Ranges (to the West of the Central Valley) simultaneously. This formed a ring around the Central Valley, which formed 150 million years ago, and is too hot and dry for the salamanders to occupy. Over time the populations on either side of the valley have evolved differences in appearance and behavior to the point that the populations occupying the region where the ring meets in Southern California (between *E. e. klauberi* and *E. e. eschscholtzii*) do not recognize each other as potential mates. All other connected populations are able to mate and produce viable offspring.





 *xanthoptica*



Question 3

Correct

1.00 points out of 1.00

Absence of mating between *E. e. eschscholtzii* and *E. e. klauberi* is an example of a pre-zygotic isolating mechanism.

Select one:

- True ✓
- False

The correct answer is 'True'.

Question 4

Correct

1.00 points out of 1.00

According to the biological species concept, *E. e. eschscholtzii* and *E. e. klauberi* are different species.

Select one:

- True ✓
- False

The correct answer is 'True'.



[Question 5] Consider the following scenario to answer the question below.

- Imagine you have a single large island with many individuals of Species A living throughout the island.
- After a change in sea level, the island splits in to two islands. Species A remains unchanged on one of the islands, but it evolves into Species B on the other island.
- After a volcano erupts, a third island appears. A few individuals from Species B colonize the new island and evolve into Species C.
- On this new volcanic island, the volcano erupts again and divides the island into two separate parts. In one part of this island, the population of Species C barely changes, while on the other part of the island the population evolves to become Species D.
- Several decades later, individuals from Species C disperse to one of the other islands and over time they evolve into species E.

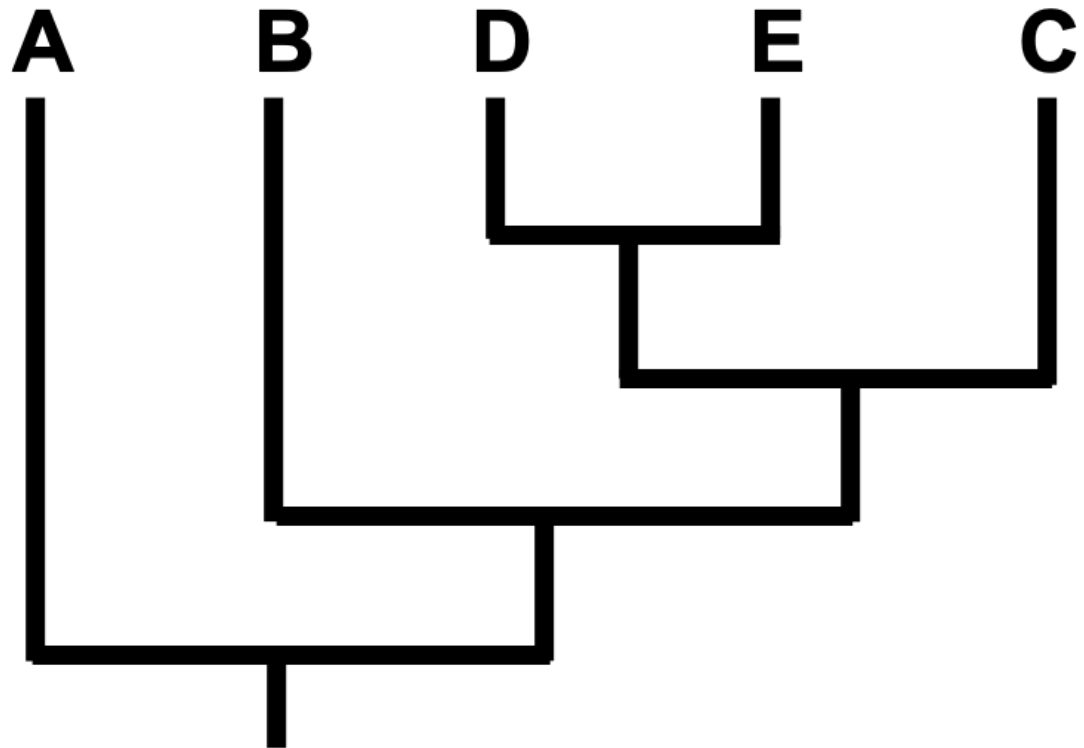


Question 5

Incorrect

0.00 points out of 1.00

True or False: The phylogeny below represents the evolutionary history of species A-E on these islands.



Select one:

True ✘

False

The correct answer is 'False'.



Question 6

Correct

1.00 points out of 1.00

Which of the following statements *most closely* describes how you perceive the reflection and the mini-midterms?

If you have additional things that you found useful about the reflection and mini-midterms, that would be something great to include in your course evaluations at the end of the quarter.

- a. It helped to consider how my study habits could be related to my performance on the exam.
- b. I felt more accountable to change my study habits between the two midterms.
- c. I am still unsure on how to plan the amount of time I devote to the course, and the midterm reflection did not help with this.
- d. It helped to see the learning objectives for each question.
- e. It helped to see other alternative study strategies that I could consider for the next exam. ✔
- f. I still think I need more guidance on how to change my study habits.
- g. It helped me think about how efficient my study habits were for the course.
- h. I don't think the midterm reflection helped me improve my study skills.

Your answer is correct.

The correct answers are: It helped to see the learning objectives for each question., It helped me think about how efficient my study habits were for the course., It helped to see other alternative study strategies that I could consider for the next exam., It helped to consider how my study habits could be related to my performance on the exam., I felt more accountable to change my study habits between the two midterms., I still think I need more guidance on how to change my study habits., I don't think the midterm reflection helped me improve my study skills., I am still unsure on how to plan the amount of time I devote to the course, and the midterm reflection did not help with this.



◀ Midterm II - Reflection ...

Jump to...

Final Exam Winter 22 LS7B ▶

