Question 1: Jackson's pelican and brown fox having elaborate mating dances where males set up an extensive display for females. Males of species with elaborate mating dances have evolved to have more muscle than males of species without elaborate mating dances. Based on the above, an alternative hypothesis that explains the mating success of males, dance ability or size, is that dance ability is a proxy for strength and that males with better dance ability, that appears like a crazy, The bigger the male, the larger the ability of male to defend a territory against other males

Question 20
Correct
1.00 points out of 1.00
Flag question
Edit question

Two hypotheses in that manuscript that originated in Gondwana (the southern supercontinent that included what would later become South America, Africa, Antarctica, Australia, and the Indian subcontinent) and then dispersed to Laurasia (the northern supercontinent) at the time of the K-Pg Event (North American marsupials would represent the most recent lineage of marsupials on a phylogenetic tree.

1. True
2. False

Life
Evaluate data and phylogenetic patterns, and indicate how they are used to test hypotheses about historic and current patterns of biodiversity.
Relate evidence from the fossil record to macroevolutionary changes in major lineages of organisms.
Interpret a chronogram and draw conclusions from the dates.
Relate data from molecular clocks to evolutionary patterns in organismal lineages

The correct answer is:
True

Question 21
Correct
1.00 points out of 1.00
Flag question
Edit question

As you continue your work, you are able to construct the following phylogeny using data from the fossil record.

MONOTREMES
Platypus (ornithorhynchus anatinus)
Short-beaked echidna (Tachyglossus aculeatus)
Long-beaked echidna (Zaglossus bruijni)
MARSUPIALS
Virginia opossum (Didelphis virginiana)
Tasmanian devil (Sarcophilus harrisii)
Brown antechinus (Antechinus stuartii)
Kangaroo (Macropus giganteus)
Koala (Phascolarctos cinereus)
Wombat (Vombatus ursinus)
Tasmanian tiger (Thylacinus cynocephalus)
Tasmanian devil (Sarcophilus harrisii)
Virginia opossum (Didelphis virginiana)
PLACENTALS
Human (Homo sapiens)
Chimpanzee (Pan troglodytes)
Gorilla (Gorilla gorilla)
Orangutan (Pongo pygmaeus)
Gibbon (Hylobates lar)
Rhesus macaque (Macaca mulatta)
Baboon (Papio hamadryas)
Colobus (Colobus guereza)
Langur (Presbytis entellus)
Tarsier (Tarsius bancanus)
Mouse lemur (Microcebus murinus)
Galago (Galago senegalensis)
Tree shrew (Tupaia belangeri)
Cat (Felis catus)
Dog (Canis familiaris)
Horse (Equus caballus)
Cow (Bos taurus)
Pygmy hippopotamus (Hexaprotodon liberiensis)
Common hippopotamus (Hippopotamus amphibius)
Sperm whale (Physeter macrocephalus)
Blue whale (Balaenoptera musculus)
Fin whale (Balaenoptera physalus)
Harbor seal (Phoca vitulina)
Gray seal (Halichoerus grypus)
Harbor seal (Phoca vitulina)
Grey seal (Halichoerus grypus)
Walrus (Odobenus rosmarus)
Pacific walrus (Odobenus rosmarus divergens)
Atlantic walrus (Odobenus rosmarus rosmarus)
Cape golden mole (Chrysochloris asiatica)
Cape golden mole (Chrysochloris asiatica)
Tenrec (Tenrec ecaudatus)
Aardvark (Orycteropus afer)
Elephant shrew (Rhynchocyon cisnerosi)
Elephant shrew (Rhynchocyon cisnerosi)
Manatee (Trichechus manatus latirostris)
Dugong (Dugong dugon)
Asian elephant (Elephas maximus)
African elephant (Loxodonta africana)
Rock hyrax (Procavia capensis)
Rock hyrax (Procavia capensis)
Rock hyrax (Procavia capensis

These results suggest that

Question **35**
Correct
3.00 points out of 3.00
Flag question

Female fish have no preference for male color

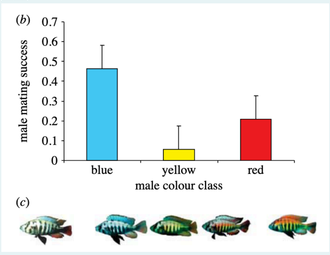
Select one:
- True
- False ✔

Define sexual selection
Differentiate between pre- and post-zygotic isolating mechanisms.

The correct answer is 'False'.

Information
Flag question

[Questions 36 and 37] The two species of fish are capable of producing hybrids. Hybrid males vary in color from red to blue, but often take on an intermediate yellow color. These hybrids do not suffer from any intrinsic fitness disadvantage, and are fertile. The graph below presents data on the success of hybrid males (F2 generation, with a range of coloration) in mating with females (also from the F2 generation).



Question **36**
Correct
3.00 points out of 3.00
Flag question

These results are most consistent with which scenario of selection:

a. Stabilizing natural selection favoring yellow males

b. Disruptive natural selection favoring yellow males

c. Disruptive sexual selection favoring red and blue males ✔

d. Stabilizing sexual selection favoring red and blue males

e. Disruptive sexual selection favoring yellow males

LOs
Evaluate data to determine the direction and mode of selection on a specific trait in a population
Predict how different modes of selection affect the distribution of phenotypes in a population

The correct answer is:

Disruptive sexual selection favoring red and blue males

Question **37**
Incorrect
0.00 points out of 3.00
Flag question

The presented results suggest that sympatric populations of *P. nyererei* and *P. pundamilia* are likely to remain separate species.

Select one:
- True
- False ✘

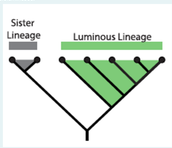
Define sexual selection
Differentiate between pre- and post-zygotic isolating mechanisms.
Relate the pre- and post-zygotic isolating mechanisms to the process of speciation

The correct answer is 'True'.

Question **38**
Correct
3.00 points out of 3.00
Remove flag

[Question 38] Ostracods are tiny marine crustaceans. Some, but not all, species of ostracods are able to bioluminesce. At night, they release bursts of luciferase, an enzyme that catalyzes a light-producing reaction. This phenomenon is referred to as bioluminescence, and it allows the ostracods to produce species' specific patterns of flashing light. In many cases, bioluminescence in these groups can be used to startle predators and avoid predation. It is difficult to know if the pattern of flashing light shown in each species serves the sole purpose of predator avoidance, if it is used to attract mates, or may serve both purposes

Let's assume we already know that groups with members that can bioluminesce have more species than groups that do not bioluminesce.



If bioluminescence is commonly used for predator avoidance, how could we use phylogenetics to test that it also facilitates speciation via sexual selection?

a. compare species diversification in clades with and without bioluminescence

b. count the total number of different patterns of light emission in the luminous clade

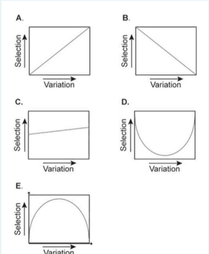
c. compare species diversification in clades that use bioluminescence for courtship vs. those that use it only for defense ✔

The correct answer is:

compare species diversification in clades that use bioluminescence for courtship vs. those that use it only for defense

Information
Flag question

[Question 39] Consider the graphs below that relate strength of selection to the amount of variation in a trait.



Question **39**
Incorrect
0.00 points out of 3.00
Remove flag

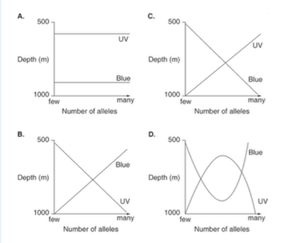
Which of the graphs best represents the relationship between the intensity of stabilizing selection and the genetic variation present within a population?

a. Graph A ✘
b. Graph B
c. Graph C
d. Graph D
e. Graph E

The correct answer is:
Graph B

Information
Flag question

[Questions 40-41] Blue light is that portion of the visible spectrum that penetrates the deepest into bodies of water. Ultraviolet (UV) light, though, can penetrate even deeper. A gene within a population of marine fish that inhabits depths from 500 m to 1,000 m has an allele for a photopigment that is sensitive to UV light, and another allele for a photopigment that is sensitive to blue light.



Question **40**
Correct
3.00 points out of 3.00
Remove flag

Which graph best depicts the predicted distribution of these alleles if the fish that carry these alleles prefer to locate themselves where they can see best?

a. Graph A
b. Graph B ✔
c. Graph C
d. Graph D

The correct answer is:
Graph B

Question **41**
Correct
3.00 points out of 3.00
Flag question

These fish prefer to mate with individuals they encounter at the same depth as themselves. This would result in directional selection in the population.

Select one:
- True
- False ✔

The correct answer is 'False'.

Finish review

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