NAME _____

HONORS BIOLOGY Evolution TEST - Chapters 15-17

MULTIPLE CHOICE

Write the letter for the answer that best completes the statement on the blank at the left.

_____ A well supported, testable explanation of phenomena that have occurred in the natural world is called a _____

A. hypothesis
B. theory
C. law
D. prediction

_____ Darwin's voyage on the H.M.S._____ led him to propose a revolutionary hypothesis about life.

A. Collie
B. Cheetah
C. Beagle
D. Lion

_____ Darwin's hypothesis about how life changes over time in now called the Theory of _____.

A. Evolution
B. Variation
C. Derived characters
D. Use and disuse

_____ Of all the places he visited, the _____ Islands influenced Darwin's ideas about evolution the most.

A. Hawaiian
B. Aleutian
C. Beagle
D. Galápagos

_____ On the Galápagos Islands, Darwin observed that the characteristics of many animals and plants

A. all looked alike
B. were completely unrelated
C. were acquired through use
D. varied from island to island

_____ When lions prey on a herd of antelope, some antelope are killed and some escape. Which part of Darwin's concept of natural selection might be used to describe this situation?

A. acquired characteristics
B. common descent
C. descent with modification
D. survival of the fittest

_____Which of the following ideas, proposed by Lamarck, was later found to be INCORRECT?

A. All species were descended from other species
B. Acquired characteristics can be inherited.
C. Living things change over time.
D. Organisms are adapted to their environments.

_____ When Darwin returned from his voyage, he _____

A. immediately published his ideas about evolution
B. realized his ideas about evolution were wrong
C. wrote about his ideas but waited many years to publish them
D. copied the evolutionary theory of Wallace

_____ Survival of the fittest was also called _____ by Darwin.

A. Use it or lose it
B. genetic drift
C. natural selection
D. struggle for existence

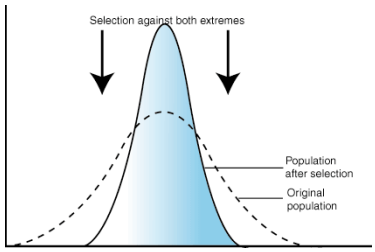
_____ Struggle for existence could also be called _____.

A. adaptation
B. survival of the fittest
C. use it or lose it
D. competition

_____ Structures that are so reduced in size that they are nonfunctional are called_____ organs

A. vestigial
B. homologous
C. Darwinian
D. adaptive

_____ Which type of selection has this population undergone?



A. STABILIZING
B. DIRECTIONAL
C. DISRUPTIVE

_____ Adaptive radiation could also be called _____ evolution.

A. convergent evolution
B. divergent evolution
C. coevolution

_____Darwin's concept of evolution was influenced by all of the following EXCEPT _____

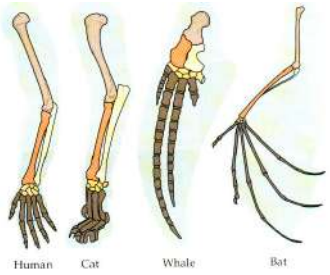
A. the work of Charles Lyell and James Hutton
B. his collection of specimens and fossils
C. his knowledge of the structure of DNA
D. his voyage around the world

_____ Which of the following is NOT part of Darwin's Theory of Evolution?

A. Natural variation exists in a population
B. Organisms must compete with each other to survive.
C. Organisms with the highest fitness will survive and reproduce and others will die out.
D. Traits an organism acquires through use during its lifetime can be passed on to offspring.
E. Species alive today are descended with modification from ancestral species and are linked to a single "tree of life"

_____ Vertebrate limbs which have different mature forms but develop from the same embryonic tissue are examples of

A. homologous structures
B. acquired traits
C. vestigial organs
D. homozygous structures



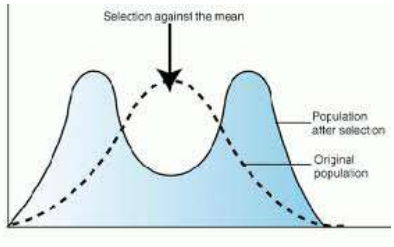
_____ All of these statements about the structure of human chromosome #2 provide evidence for evolution EXCEPT _____

A. Its banding pattern matches the pattern seen on two smaller chimp chromosomes
B. It carries a functional gene for making vitamin C
C. It has telomeres in the center, as well as at the ends
D. It has an extra non-functional centromere.

_____ According to Darwin's theory of natural selection, the individuals that tend to survive are those that have _____.

A. characteristics their parents acquired by use and disuse
B. characteristics that plant and animal breeders value
C. the greatest number of offspring
D. variations best suited to their environment

_____ Which type of selection has this population undergone?



A. STABILIZING
B. DIRECTIONAL
C. DISRUPTIVE

_____ The idea that all living things are derived from a common ancestor and linked together in a "single tree of life" is called _____

A. survival of the fittest
B. inheritance of acquired traits
C. common descent
D. artificial selection

_____ Adaptations can be _____

A. physical or behavioral
B. physical or geographical
C. acquired during an organism's lifetime

_____ The inability of humans and other primates to make _____ suggests a common ancestor and supports the idea of evolution.

A. myosin
B. vitamin C
C. proteins
D. DNA

_____ Darwin was prompted to publish his ideas about evolution by

A. an essay by Wallace on evolution
B. the publication of Lamarck's theory of evolution
C. his wife Emma
D. the work of Hutton and Lyell

_____ Which of the following best describes how DARWIN would explain giraffes with long necks?

A. Long-necked giraffes eat more grass than short necked giraffes so their necks grow longer.
B. Natural variation in the population produces some longer and some shorter-necked giraffes and longer necked giraffes can reach food more easily and survive to pass on their genes.
C. Some giraffes have acquired longer necks by stretching to reach food and passed that trait on.
D. Giraffes just started out with long necks and haven't changed

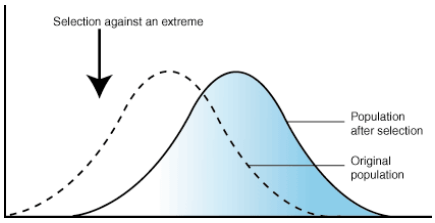
_____ Which of the following best describes how LAMARCK would explain giraffes with long necks?

A. Long-necked giraffes eat more grass than short necked giraffes so their necks grow longer.
B. Natural variation in the population produces some longer and some shorter-necked giraffes and longer necked giraffes can reach food more easily.
C. Some giraffes have acquired longer necks by stretching to reach food and passed that trait on.
D. Giraffes just started out with long necks and haven't changed.

_____ All of the following must be TRUE for Hardy-Weinbert equilibrium to exist EXCEPT

A. mutations can happen
B. random mating
C. large population
D. no migration
E. no natural selection

_____ Which type of selection has this population undergone?



A. STABILIZING
B. DIRECTIONAL
C. DISRUPTIVE

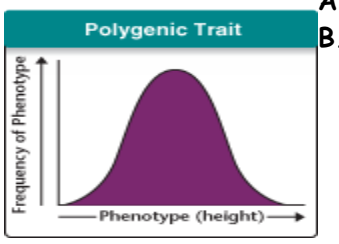
_____ Which of the following is an example of a vestigial structure in a whale?
A. flipper
B. hipbone
C. ear drum
D. backbone

_____ Which of the following is an example of a human vestigial organ?
A. tonsils
B. arm bone
C. gall bladder
D. appendix

_____ A gene that is present but has mutated so it has lost its function is called a _____
A. super gene
B. los gene
C. telomere
D. pseudogene

_____ When a population reaches genetic equilibrium _____
A. evolution doesn't happen
B. evolutions happens more quickly
C. mass extinction occurs to keep the population the same
D. all the conditions for Hardy-Weinberg are NOT met

_____ This bell-shaped curve of phenotype distribution is typical of _____ traits.



A. recessive
B. single gene
C. polygenic
D. vestigial

_____ When fat yellow mother mice with the agouti gene for obesity are fed a diet high in methyl groups, their offspring are born thin and brown even though they still have the agouti gene. This is an example of _____.

A. natural selection
B. epigenetics
C. a polygenic trait
D. pseudogenes

_____ The class measured lima beans and found them to range in size from 8.5-19.5 mm. This is an example of _____ that Darwin talked about.

A. overproduction of offspring
B. survival of the fittest
C. natural variation
D. homologous structures

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MATCH THE VOCAB WORD WITH ITS DEFINITION

_____ Idea that members of each species must compete regularly for food

_____ A change in the DNA sequence caused by a mistake in replication or exposure to radiation or chemicals

_____ Idea that the fittest individuals in a population will survive and reproduce while those with less fitness will die or leave fewer offspring

_____ Idea that each living species has descended with changes from other ancestral species over time

A. DESCENT WITH MODIFICATION

B. STRUGGLE FOR EXISTANCE

C. NATURAL SELECTION

D. MUTATION

_____ Tortoises eat plants. Which island do you think has plants that grow very close to the ground.

A. Isabela Island
B. Hood Island
C. Pinta Island

_____ Which island do you think has sparse vegetation that is hard to reach?

A. Isabela Island
B. Pinta Island
C. Hood Island

_____ What would you predict the vegetation and rainfall are like on Pinta Island?

A. more rain and vegetation than either Hood or Isabela
B. rainfall and vegetation somewhere between that of Hood and Isabela
C. less rain and less vegetation than both Hood and Isabela

* * * * * * * * * * * * * * *

MATCH THE VOCABULARY WORD WITH ITS DEFINITION

_____ Any inherited characteristic that increases and organism's chance for survival

_____ Ability of an organism to survive and reproduce

_____ Idea that characteristics acquire by an individual through use in its lifetime can be passed on to offspring

_____ Struggle for existence is also called this

A. FITNESS

B. ADAPTATION

C. COMPETITION

D. INHERITANCE OF ACQUIRED TRAITS

* * * * * * * * * * * * * * *

MATCH THE DESCRIPTION WITH THE PATTERN OF EVOLUTION

_____ At the end of the Cenozoic era a large asteroid hit the Earth causing the loss of many species including the dinosaurs

A. PUNCTUATED EQUILIBRIUM

_____ Galapagos finches share a common ancestor but have evolved shapes of beaks for the different foods available in the different ecosystems

B. DIVERGENT EVOLUTION

_____ Sharks (fish), whales (mammals), and penguins (birds) have similar body shapes and flippers for moving through water

C. MASS EXTINCTION

_____ A flower has UV banded landing patterns that guides its bee pollinator to the nectar

D. CONVERGENT EVOLUTION

_____ Horses show a long stable pattern with little change followed by short bursts of rapid evolution

E. COEVOLUTION

* * * * * * * * * * * * * * *

MATCH THE EVIDENCE THAT SUPPORTS DARWIN'S THEORY OF EVOLUTION WITH ITS DEFINITION

_____ The practice of humans selecting traits they find useful from the variation provided by nature

A. ANTIBIOTIC RESISTANCE

_____ The preserved remains of an ancient organism

_____ Using a molecular clock to analyze _____ structures to determine how closely related organisms are

B. ARTIFICIAL SELECTION

_____ Grasslands exist on different continents but show different different animals with similar characteristics

C. FOSSILS

_____ Bacteria undergo changes to make new strains that can't be treated with current drugs

D.GEOGRAPHIC DISTRIBUTION

Match the letter of the scientist with the description of his contributions our understanding of the Theory of Evolution.

A. Jean-Baptiste Lamarck B. Charles Darwin C. Thomas Malthus D. Alfred Wallace

_____ English naturalist who made numerous observations during his travels which led him to propose a theory about how life changes over time through natural selection

_____ French naturalist who proposed that the selective use or disuse of an organ led to a change in the organ and that these acquired traits could be passed on to offspring

_____ English economist who predicted that the human population would grow faster than the resources needed to sustain it

_____ Naturalist who published his own theory of evolution about evolution about the same time as Charles Darwin.

*** * * * * * * * * * * * * * ***

MATCHING: Match the letter of the scientist with the description of his contributions to the formation of the Theory of Evolution.

A. James Hutton B. Wilhelm Weinberg C. Charles Lyell D. Godfrey Hardy

_____ & _____ These TWO scientists explained that the Earth that the Earth is very old and has been shaped by geological forces over long periods of time, and that these processes can still be seen happening today.

_____ & _____ These TWO mathematicians came up with an equation to describe allele frequencies in populations and show whether evolution is happening.