

1. If you get identical copies of a certain gene from both parents, you are said to be:

- A. a carrier B. homozygous C. heterozygous D. a hybrid E. polygenetic F. Mendelian

2. The alternate, variant forms of a gene in the gene pool (such as the ones for normal and sickle cell forms of hemoglobin) are called: A. Chromosomes B. Covenes C. alleles D. gametes E. nucleuses

3. Human sperm are examples of:

- A. zygotes B. cells produced by mitosis C. gametes D. cells with 46 chromosomes E. diploid cells

4. This refers only to an allele that is always expressed in a heterozygous individual:

- A. Homozygous B. Mutation C. Dominant D. Recessive E. Zygote

5. What is the type of cell division that produces four cells of 23 chromosomes from one cell of 46?

- A. Mutation B. Mitosis C. Protein synthesis D. Replication E. Meiosis

6. What's genetic drift? A. The migration of individuals to join other populations of that species B. New mutations

- C. Random sampling errors like the founder effect and gamete sampling D. Same as natural selection

7. Which is true about mutations?

- A. when the environment changes, beneficial mutations always occur to prevent extinction.

- B. When the environment does not change, no mutations will occur.

- C. Mutations are the source of new variations

- D. mutations that happen to adults during mitosis will be passed on to their children

- E. All of these are true

8. If the allele for black fur is dominant to the allele for white fur in mice, and a pair of black mice have a white baby mouse, then:

- A. Mommy mouse is in trouble, this cannot happen.

- B. Both parents are heterozygous

- C. The baby is homozygous dominant

- D. Both parents are homozygous recessive

- E. Both parents are homozygous dominant

9. The finches of the Galapagos that Darwin observed are now seen as an example of:

- A. Darwinian gradualism B. Speciation or adaptive radiation C. Continental drift

- D. recessives becoming dominant alleles

- E. Spontaneous generation

10. Sickle cell anemia persisted in high malaria environments for thousands of years because:

- A. natural selection favored heterozygous carriers B. People with normal hemoglobin were not as fit there

- C. humans changed the environment through farming that increased mosquitos and malaria, and humans adapted.

- D. The malaria plasmodium cannot thrive in slightly anemic people.

- E. all of the above are part of the chain of causality.

BONUS: In the reading "The 2% difference", what is the 2% difference in the title?

QUIZ # 7 1. The meaning of “Creation Science” (or “Scientific Creationism”) in the video we saw is:

- A. The belief that God is responsible for the Big Bang 15 billion years ago.
- B. The knowledge gained from reading the Bible.
- C. The quest for scientific evidence that supports the hypothesis that the earth is under 10,000 years old.
- D. Any belief in a creation by a superior being at any time in the past.
- E. The modern theory of evolution based on Darwin and genetics.

2. Mucci thinks that the metal hammer in the limestone in the video probably was:

- A. Real (humans made iron tools while mountains were still being created
- B. A miracle
- C. A fake made with plaster and painted
- D. Left by aliens
- E. A real hammer left for a few years in a water tank

3. In the 1920's, Tennessee schoolteacher Scopes was tried for teaching evolution; what happened?

- A. He was convicted, paid a fine, and teaching evolution continued to be illegal in many states for decades.
- B. He was found innocent, and teaching evolution was then legal.
- C. The jury was deadlocked, so the US Supreme Court found Scopes innocent
- D. He was found innocent, but all courts ruled that creationism must be taught alongside evolution in public schools

4. In order for a single species to become more than one species, what must happen?

- A. The gene flow must be stopped in some place so that the species is separated into two or more gene pools.
- B. Natural selection must stop.
- C. No mutations can occur
- D. All of these must happen.

5. When Mendel crossed hybrid peas (all tall) that had both tall and short genes in each plant, he got:

- A. 100% medium height plants
- B. 100% tall plants
- C. 1/4 tall, 1/2 medium, 1/4 short
- D. 75% tall

6. Darwin's idea of natural selection applies to the evolution of the long neck of giraffes by:

- A. Individual giraffes stretching their necks and passing this on to their offspring
- B. Blending inheritance
- C. Differential reproduction and continued variation
- D. Random genetic drift

7. Which is TRUE?

- A. Only people of African descent can get sickle cell anemia
- B. In high malaria environments, those who carry the trait are more affected by malaria than those who do not
- C. If two heterozygotes have a child, the chances are that half their children will be heterozygotes
- D. All of these are true

8. Which is TRUE?

- A. Basically, a gene is a code, a recipe, for making a protein molecule
- B. Proteins are long strings of amino acids
- C. Hemoglobin is a protein
- D. Mutations can happen when DNA is duplicated (replicated)
- F. All of these are true

9. Which is not one of the four factors that cause evolutionary change?

- A. natural selection,
- B gene pool
- C. Random genetic drift,
- D. mutation,
- E. gene flow

10. A physical characteristic that is a result of a combination of several genes and the environment is called:

- A. Mendelian
- B. Monogenic
- C. Genotype
- D. Polygenic
- E. Pleiotropic

NAME _____

BONUS: tell me one thing you learned from reading “Dr Darwin”