

QUIZ # 6 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. The sex of a child is determined by:

- A. Genes of both mom and dad B. the sperm only C. the ova only D. the environment
E. None of the above, it is not genetic but random 50/50

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 brown eyes is dominant to the allele for blue eyes in parrots, and a pair of brown eyed parrots have a blue eyed chick, then:

- A. Mom is in trouble, this cannot happen. B. Both parents are heterozygous
C. The chick 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: What's genetic drift?

- A. The migration of individuals to join other populations of that species
B. Random sampling errors like the founder effect and gamete sampling C. Same as natural selection

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. In the video we saw, the “human footprints” they found with dinosaur prints turned out to be:

- A. Real (humans did walk with dinosaurs) B. fakes placed under water C. miracles
- D. 3-toed dinosaur prints with a deep heel impression E. prints of alien visitors from another planet

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. The union of a sperm and ovum produces a large cell will become a new individual. This large cell has 46 chromosomes and is called a:

- A. Gamete B. Zygote C. Monogene D. Haploid

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 less affected by malaria than those who do not
- C. If two heterozygotes have a child, the chances are three out of four that it will have full blown sickle cell anemia
- 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. Which is true about the Punctuated equilibrium theory? It suggests that:

- A. The same four factors of the synthetic theory are the causes of change.
- B. Most evolutionary change happens quickly, and in small populations.
- C. Stasis is common in large, geographically distributed species.
- D. Random genetic drift is more common than previously thought.
- E. New species arise frequently, but only some survive.
- F. All of these are part of the theory.

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BONUS: what does the theory of Intelligent Design refer to?