



Test Prep

CLEP-Science-and-Mathematics

**Biology, Calculus, Chemistry, College Algebra &
Mathematics, Precalculus, Natural Sciences**

QUESTION & ANSWERS

Question: 1

Which of the following would NOT be found in an animal with bilateral symmetry?

- A. Dorsal side
- B. Anterior
- C. Posterior
- D. 3 axes of symmetry
- E. Ventral side

Explanation/Reference:

Answer: D

Explanation/Reference:

Explanation:

Something with 3 axes of symmetry can be divided into three parts, each of which looks equivalent.

Question: 2

Plasma B cells are essential in the human immune response because of their ability to

- A. produce antibodies that can clump bacteria or viruses together so that macrophages can ingest them
- B. attach directly to infected cells and puncture them with enzymes
- C. cause antigen molecules, such as toxins, to settle out of the blood plasma
- D. engulf pathogens that they encounter in the bloodstream
- E. clot open wounds so that bacteria cannot invade the body

Explanation/Reference:

Answer: A

Plasma B cells are specialized immune system cells that secrete antibodies, small Y-shaped proteins that can directly attach to and agglutinate, or clump, invading bacteria. Attaching directly to cells is the job of killer-T cells, and engulfing pathogens is the job of macrophages. Clotting is done primarily by platelets and other protein fibers.

Question: 3

The first vertebrates to live on land were the amphibians, characterized by their ability to

- A. lay eggs and by their rough, scaly skin
- B. breathe through moist skin and walk on four limbs
- C. lay hard-shelled eggs on land
- D. run quickly on land using muscular limbs
- E. develop mammary glands for milk production

Answer: B

Explanation/Reference:

Amphibians are characterized by their ability to breathe through moist skin (in addition to small lungs) and to walk on four limbs. They do not have rough, scaly skin or lay hard-shelled eggs like their reptile descendants, nor can they run quickly on land with muscular limbs (also like reptiles). Mammals are set apart by their milk-producing abilities.

Question: 4

Fossils of an ancient reptile called Lystrosaurus have been found in Africa, India, and Antarctica. Which of the following best explains this distribution?

- A. They were able to move between continents before the oceans filled
- B. The movement of India due to continental drift carried them from place to place
- C. These land areas were once next to each other and have since drifted apart.
- D. They were able to migrate over frozen seas during Ice Ages
- E. Changes in climate forced them to migrate from place to place.

Answer: C

Explanation/Reference:

The best evidence to support the finding of fossils on widely separated land masses comes from continental drift theory, which states that certain land areas had been connected and slowly drifted apart. This would allow for separation of what were once continuous species' ranges. It is highly unlikely that a reptile species could have moved easily between continents or could have survived frozen seas during the Ice Ages.

Question: 5

Gregor Mendel identified "factors" that could be passed down from parents to offspring and that resulted in the expression of certain characteristics. Today, we call Mendel's "factors"

- A. linked genes
- B. alleles

- C. genotypes
- D. phenotypes
- E. homologous chromosomes

Answer: B

Explanation/Reference:

Different forms of the same gene are called alleles. For example, B (brown) and b (blue) are two different possible eye color alleles in humans. No other answer choices fit the definition of a "factor" that results in the expression of a certain characteristic.

Question: 6

A decrease in the amount of carbon dioxide present in the air surrounding most plants would most likely result in

- A. the death of the plants
- B. an increase in the production of sugars through photosynthesis
- C. a decrease in the output of the Calvin cycle
- D. the breakdown of chlorophyll molecules in the mesophyll layer
- E. more nitrogen released into the air from the soil

Answer: C

Explanation/Reference:

Carbon dioxide is needed in the Calvin cycle to produce sugars, and there is no connection between the Calvin cycle and the building of nitrogen-producing compounds by a plant. The decrease in carbon dioxide would most likely not result in the plant's death, but it might hurt the plant by decreasing its ability to produce sugars. Chlorophyll molecules should be unaffected

Question: 7

Fertilization of a human ovum normally occurs in the

- A. vagina
- B. ovary
- C. uterus
- D. somniferous tubule
- E. oviduct