



COOL TECH

CRISPR and Other Biotech

Scientists and inventors are developing strange new ways to feed, heal, and care for a growing human population. Many of these breakthroughs involve messing with the stuff of life itself. Learn about these technologies in *CRISPR and Other Biotech!*

What did you learn?

QUESTIONS

1. The company Initiative 2045 hopes to design an artificial body known as a(n) ...
 - a. Avatar
 - b. Clone
 - c. Parasite
 - d. Cyborg
2. Dolly, the first cloned mammal, only survived to be ...
 - a. 10 years old
 - b. 2 years old
 - c. 3 years old
 - d. 5 years old
3. The first cat to be cloned for commercial purposes was named ...
 - a. Little Vicky
 - b. Little Nicky
 - c. Little Lucy
 - d. Little Katy
4. The most common type of stem cell therapy is ...
 - a. Tissue engineering
 - b. Nuclear transfer
 - c. Bone marrow transplant
 - d. Cellular agriculture
5. What does CRISPR stand for?
6. What is the nickname of IBM's 2011 supercomputer?

TRUE OR FALSE?

- | | |
|--|---|
| _____ 1. Biofuel is produced directly from living matter. | _____ 4. The goatlike bucardo, or Pyrenean ibex, was cloned via embryo splitting. |
| _____ 2. Scientists noted that eating an extremely low-calorie diet seemed to increase the lifespan of mice and monkeys. | _____ 5. Prosthetics is the branch of medicine that deals with artificial body parts. |
| _____ 3. Parabiosis involves revitalizing an aging body with blood transfusions from aged blood. | _____ 6. A chromosome is a unit of the energy supplied by food. |

ANSWERS

- 1. a. Avatar.** According to the section "Extending Life" on page 25, we know that "They hope to design an artificial body known as an avatar that can be controlled directly by a human brain." So, the correct answer is A.
- 2. d. 6 years old.** According to the section "Cloning" on page 28, we know that "But Dolly died in 2003 at age six—young for a sheep." So, the correct answer is D.
- 3. b. Little Nicky.** According to the section "Cloning" on page 30, we know that "The clone, known as Little Nicky, was the first cat to be cloned for commercial purposes." So, the correct answer is B.
- 4. c. Bone marrow transplants.** According to the section "Stem Cells" on page 16, we know that "Bone marrow transplants are the most common type of stem cell therapy." So, the correct answer is C.
- 5.** According to page 7, CRISPR stands for Clustered Regularly Interspaced Short Palindromic Repeats.
- 6.** According to page 34, the nickname of IBM's 2011 supercomputer is Watson.

TRUE OR FALSE? ANSWERS

- 1. True.** According to the section "CRISPR" on page 8, we know that "CRISPR may be helpful in the production of biofuel, a fuel produced directly from living matter." So, the correct answer is True.
- 2. True.** According to the section "Extending Life" on page 22, we know that "Scientists noted that eating an extremely low-calorie diet seemed to increase the lifespan of mice and monkeys." So, the correct answer is True.
- 3. False.** According to the section "Stem Cells" on page 19, we know that "Parabiosis is a controversial process that involves revitalizing an aging body with transfusions of blood from younger individuals." So, the correct answer is False.
- 4. False.** According to the section "Cloning" on page 31, we know that "The goatlike bucardo, or Pyrenean ibex, became extinct in 2000. But in 2003, a Spanish biotechnology company created a clone from frozen skin cells ... " So, the correct answer is False.
- 5. True.** According to the section "The Healthcare Of Tomorrow" on page 36, we know that "Prosthetics is the branch of medicine that deals with supplying artificial parts for the body." So, the correct answer is True.
- 6. False.** According to the section "Glossary" on page 46, we know that "chromosome is thin threadlike structure found in cells of all organisms." So, the correct answer is False.