

**URI CMB 190
Issues in Biotechnology
Lesson 1**

Name _____ Date _____

1. A genome is:

- (A) all of the genes in an organism**
- (B) all the DNA in an organism, including its genes.**
- (C) a method of creating stem cells**
- (D) all of the chromosomes in an organism**
- (E) All of the DNA, except the genes**

2. DNA stands for:

- (A) Detroit Neutron Association**
- (B) Dioxin Ribonucleic Acid**
- (C) Dioxygen Nueberg Assay**
- (D) Deoxyribonucleic Acid**
- (E) None of these answers are correct**

3. The first draft of the human genome was first published in the Journal Nature. Knowing all the genes in humans may have profound affects on which areas in the future?

- (A) Marine Sciences and Ecology**
- (B) Medicine and Pharmacy**
- (C) Insurance**
- (D) Anthropology, Psychology, Psychiatry, and Forensics**
- (E) The areas in all of the answers above have already been affected**

4. There is currently a wide gap between the knowledge of the general public about DNA, recent advances in biology and biotechnology, as well as the actual applications in the real world most likely because

- (A) teaching modern biology is outlawed in most states in the US in favor of religious studies**
- (B) The advances have been so rapid, often controversial and this material is not required in most schools**
- (C) the biotechnology companies have conspired to keep the public 'in the dark'**
- (D) it is simply irrelevant to the lives of most people**
- (E) it is only conveyed in the mainstream media by neo-conservative right wing radicals and religious fundamentalists to make sure it is not funded**

5. Science is:

- (A) a field of study that requires certain laws of nature to be taken on faith.**
- (B) both a body of knowledge and an intellectual activity encompassing observation, description, experimentation, and explanation of natural phenomena.**
- (C) a process that can be applied only within the scientific disciplines, such as biology, chemistry, and physics.**
- (D) the only way to understand the natural world.**
- (E) None of the above.**

6. All of the following are elements of biological literacy except:

- (A) the ability to use the process of scientific inquiry to think creatively about real-world issues having a biological component.**
- (B) reading the most important books in biology.**
- (C) the ability to integrate into your decision-making a consideration of issues having a biological component.**
- (D) the ability to communicate with others about issues having a biological component.**
- (E) All of the above are elements of biological literacy.**

7. The World Population

- (A) has not increased in the last decade due to the success worldwide of zero population growth methods**
- (B) is now at seven billion people and growing exponentially**
- (C) suffered a huge setback from the AIDS epidemic**
- (D) will never overwhelm resources or result in a toxic environment**
- (E) will require only those resources afforded to us to survive**

8. Biotechnology is:

- (A) the use manipulation of DNA to produce something harmful to people**
- (B) the use of biological organisms by humans to produce something useful**
- (C) the use management of living organisms or their components to produce something useful for people**
- (D) the use manipulation of crop plants to control agriculture**
- (E) the major cause of global warming.**

9. Biotechnology is controversial because

- (A) it causes various side effects including geopolitical destruction**
- (B) it has not been proven to be safe**
- (C) it has both positive and negative potentials and education about it has been lacking**
- (D) the use manipulation of crop plants has destroyed agriculture**
- (E) it is the major cause of global warming**

10. The first draft of the Human Genome was first published in

- (A) 1949**
- (B) 1953**
- (C) 2001**
- (D) 2010**
- (E) has not yet been accomplished**

11. Marine Biotechnology:

- (A) will cause the collapse of all existing wild fisheries**
- (B) is the use of salt water as an alternative energy source**
- (C) the use of marine organisms by humans to produce something useful**
- (D) is the exploitation of fisheries without regulatory quotas**
- (E) has not yet been accomplished**

12. Animal cloning:

- (A) has been accomplished only in sheep**
- (B) and genetic engineering, has been accomplished for several different species**
- (C) results only in highly mutated offspring**
- (D) is condemned by the Vatican**
- (E) has not yet been accomplished**

13. Pharmacogenomics:

- (A) The study of how variations in the DNA sequence of the human genome affect the response to medications and disease predispositions.**
- (B) is controversial because it will predict a person's death**
- (C) is outlawed in the US and banned from federal support because of its links to abortion rights issues**
- (D) is the science fiction of DNA forensics**
- (E) has not yet been accomplished**

14. Forensic applications of biotechnology:

- (A) involves DNA**
- (B) has been used to solve crimes in the US**
- (C) have continued to become more sophisticated**
- (D) can be extremely accurate and sensitive resulting in expanding DNA databases for convicted felons in the US**
- (E) all of these are correct**