**Biotechnology Quiz**

1. Biotechnology is the application of technology to the study or manipulation of
   1. Plants
   2. Animals
   3. Living things
   4. People
2. How long has mankind been performing biotechnology?
   1. 6,000 years
   2. 2,000 years
   3. 200 years
   4. 40 years
3. What was the key to the emergence of the biotechnology industry in the 1900s?
   1. Discovery of cells
   2. A new recombinant DNA technique
   3. Genetic engineering
   4. Crop and animal breeding
4. Which of the following is an example of forensics?
   1. DNA fingerprinting
   2. Medical diagnostics
   3. Bioremediation
   4. Cloning
5. Pharmaceuticals fall into which category of biotechnology?
   1. Diagnostics
   2. Therapeutics
   3. Agriculture
   4. Bioremediation
6. Decreasing pesticide applications falls into which category of biotechnology?
   1. Diagnostics
   2. Therapeutics
   3. Agriculture
   4. Bioremediation
7. Which of the following is NOT a biotechnology procedure?
   1. Production of human insulin
   2. Cultivation of microorganisms
   3. Fermentation
   4. Development of technical instruments
8. Which of the following is performed by a bioindustry supplier?
   1. Specialized software development
   2. Creating new sources of energy
   3. Treatment of cancer
   4. Perform genetic engineering
9. Which of the following is NOT an example of genetic engineering?
   1. Gene isolation
   2. Gene modification
   3. Basic molecular biology
   4. Develop transgenes
10. Which of the following would be characteristic of an animal rights activist?
    1. Animals have feelings
    2. Animals have the same rights as humans
    3. Experts are reliable and impartial
    4. Concern about environmental consequences
11. Which of the following would be characteristic of a biomedical researcher?
    1. Animals don’t have feelings
    2. Animals have no rights
    3. Experts are reliable and impartial
    4. No concern about environmental consequences
12. Which of the following is an example of xenotransplantation?
    1. Kidney donation from a father to a son
    2. Using stem cells to treat cancer
    3. Cloning a pet
    4. Using a pig heart valve to treat heart disease
13. Which of the following court ruling made DNA patentable?
    * + 1. Diamond vs. Chakrabarty
        2. Brown vs. Board of Education
        3. Scopes monkey trial
        4. Roe vs. Wade
14. Which of the following needs to be considered from an ethical standpoint?
    * + 1. Gene isolation
        2. Production of human insulin
        3. Animal research
        4. Products that cure or reduce the incidence of disease
15. Which of the following is a laboratory technique used by scientists to change the DNA of living organisms?
    * + 1. Molecular biology
        2. Genetic engineering
        3. Cloning
        4. Immunology
16. Which of the following is a class of undifferentiated cells that are able to differentiate into specialized cell types?
    * + 1. Stem cells
        2. Interferon
        3. Recombinant DNA
        4. Genetics
17. Which of the following is a test to identify and evaluate the genetic information called DNA in a person's cells?
    * + 1. Genetic engineering
        2. DNA fingerprinting
        3. Recombinant DNA
        4. Immunology
18. What is a gene?
    * + 1. A region of DNA that controls a hereditary characteristic.
      1. The transplantation of living cells, tissues or organs from one species to another, such as from pigs to humans.
      2. A naturally occurring substance that interferes with the ability of viruses to reproduce.
      3. An organism whose genetic material has been altered using genetic engineering techniques.
19. Who discovered the DNA molecular structure?
    1. George Washington Carver
    2. Louis Pasteur
    3. James Watson and Francis Crick
    4. Linus Pauling
20. Who was the only person who has won two undivided Nobel Prizes?
    1. George Washington Carver
    2. Louis Pasteur
    3. James Watson and Francis Crick
    4. Linus Pauling
21. List several biotechnology fields.
22. What is bioremediation?
23. Why do we use animals in biotechnology research?

24. Where do we use fermentation?

25. Describe ethical analysis.