DNA technology/genetic engineering

BIO

Name_____ Class_____ Date_____

1 Some weed killers, insecticides, and food additives **alter the DNA** of certain cells. Because of this effect, these substances are known as

A auxins
B mutagens
C meristems
D autosomes

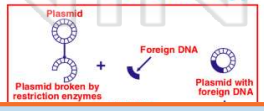
2 Using special enzymes, scientists have successfully **removed** the gene that controls the production of interferon and have **inserted** this gene into the DNA of certain bacteria. These bacteria can now produce interferon. This **technique** is known as

A amniocentesis
B differentiation
C genetic engineering
D karyotyping

3 The diagram below represents a portion of a **nucleic acid molecule.**

The part indicated by arrow X could be

4 What substances can be **produced** by this **technique** used in **biotechnology**?



5

7

C This insulin is produced as a result of exposing bacteria cells to radiation, which produces a mutation.
D This insulin may have fewer side effects than the insulin previously extracted from the pancreas of other animals.

A cloning
B meiotic division
C recombinant DNA technology
D selective breeding

9 In an experiment, **DNA** from dead pathogenic bacteria was **transferred** into living bacteria that do not cause disease. These **altered bacteria** were then injected into healthy mice. These **mice died** of the same disease caused by the original pathogens. Based on this information, which statement would be a valid conclusion?

A DNA is present only in living organisms.
B DNA functions only in the original organism of which it was a part.
C DNA changes the organism receiving the injection into the original organism.
D DNA from a dead organism can become active in another organism.

10 The diagrams below represent some steps in a procedure used in biotechnology. Letters **X** and **Y** represent the

A hormones that stimulate the replication of bacterial DNA
B biochemical catalysts involved in the insertion of genes into other organisms
C hormones that trigger rapid mutation of genetic information
D gases needed to produce the energy required for gene manipulation

DNA technology/genetic engineering - Answer Key

BIO

Name_____ Class_____ Date_____

1 Some weed killers, insecticides, and food additives **alter the DNA** of certain cells. Because of this effect, these substances are known as

A auxins
B mutagens
C meristems
D autosomes

B

2 Using special enzymes, scientists have successfully **removed** the gene that controls the production of interferon and have **inserted** this gene into the DNA of certain bacteria. These bacteria can now produce interferon. This **technique** is known as

A amniocentesis
B differentiation
C genetic engineering
D karyotyping

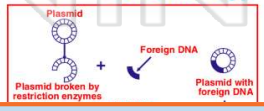
C

3 The diagram below represents a portion of a **nucleic acid molecule.**

The part indicated by arrow X could be

A

4 What substances can be **produced** by this **technique** used in **biotechnology**?



A

5

A

7

C This insulin is produced as a result of exposing bacteria cells to radiation, which produces a mutation.
D This insulin may have fewer side effects than the insulin previously extracted from the pancreas of other animals.

A

A cloning
B meiotic division
C recombinant DNA technology
D selective breeding

9 In an experiment, **DNA** from dead pathogenic bacteria was **transferred** into living bacteria that do not cause disease. These **altered bacteria** were then injected into healthy mice. These **mice died** of the same disease caused by the original pathogens. Based on this information, which statement would be a valid conclusion?

A DNA is present only in living organisms.
B DNA functions only in the original organism of which it was a part.
C DNA changes the organism receiving the injection into the original organism.
D DNA from a dead organism can become active in another organism.

D

10 The diagrams below represent some steps in a procedure used in biotechnology. Letters **X** and **Y** represent the

A hormones that stimulate the replication of bacterial DNA
B biochemical catalysts involved in the insertion of genes into other organisms
C hormones that trigger rapid mutation of genetic information
D gases needed to produce the energy required for gene manipulation

B