Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Section\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13-2: Human Genetic Disorders

1. How are genetic disorders inherited in humans?
2. A \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ is an abnormal condition that a person inherits through genes or chromosomes.

 a. Can be caused by a \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_- cystic fibrosis, hemophilia, sickle cell.

 b. Can be caused by a change in the structure or number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-

 Down’s syndrome and Edward’s syndrome

1. Examples of genetic disorders
2. Cystic fibrosis**:** body produces thick mucus in lungs and intestines.

 a.  **\_\_\_\_\_\_\_\_\_\_\_**disorder

 b. **\_\_\_\_\_\_\_\_\_\_-** 3 bases are missing

Cystic fibrosis is caused by two recessive alleles being inherited from parents.

A man who has cystic fibrous marries a woman who is a carrier.

What are the possible genotypes of the offspring?

What is the possibility of these parents having a child with cystic fibrosis?

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1. Sickle cell anemia: \_\_\_\_\_\_\_\_\_\_ blood cells are sickle (crescent) shaped and cannot carry enough oxygen.

 a. Caused by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b. Sickle cell and Normal RBC are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. Hemophilia - blood clots very slowly or not at all.

a. Genetic mutation

b. \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_

C. How are genetic disorders traced, diagnosed, and treated?

1. They are traced using \_\_\_\_\_\_\_\_\_\_\_\_\_ charts.

2. Karyotypes: picture of all the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a person’s cell.

1. Genetic counseling: help couples understand the chances of having a child with a particular

 genetic disorder.

1. \_\_\_\_\_\_\_\_\_\_\_\_ of genetic disorders:

a. Physical therapy

 b. \_\_\_\_\_\_\_\_\_\_\_, vitamins, diets

c. Education and job training

13-3: Advances in Genetics

1. How can organisms be produced with desired traits?
2. Cloning: produce an \_\_\_\_\_\_\_\_ copy of an organism.
3. Genetic engineering: genes from \_\_\_\_\_\_\_ organism are placed in the DNA of \_\_\_\_\_\_\_\_

 organism.

 a. Used to make medicine and improve crops

3. Artificial selection: breeding for a \_\_\_\_\_\_\_\_\_\_\_ trait.

B. What is the impact of biotechnology?

1. Impacts on individuals

a. Treatment for human diseases

b. Testing for inherited diseases

2. Impacts on society

a. Create new jobs

b. Decreased food prices

 3. Impacts on the environment

a. Can harm or help depending on the uses

13-4: Using Genetic Information

1. What are some uses of genetic information?
2. Positive uses

a. Genetically identify individuals(DNA fingerprinting)

b. Learn about health and diseases

2. Negative uses

a. Genetic Discrimination

b. Genetic privacy