**Biotech Review Sheet**

Complete the chart.

|  |  |  |
| --- | --- | --- |
| **Biotechnology Procedure** | **Function -** what does this procedure allow scientists to be able to do? | **Applications -** what specifically can this technology be used for? |
| Gene Splicing |  |  |
| Transformation |  |  |
| Gel Electrophoresis |  |  |
| DNA Fingerprinting |  |  |
| Polymerase Chain Reaction |  |  |

Describe how you would create a Recombinant Plasmid. Include in your discussion: restriction enzymes, sticky ends, plasmid, bacteria.

What can you now do with the plasmid?

What are two ways that you can “clone” a gene? Which is faster?

What is the role of a size standard in gel electrophoresis?

Why does DNA move towards the red electrode in the electrophoresis chamber?

What is a “marker gene” used for? What are two examples of commonly used “marker genes”?

*Operons (review):*

What is the difference between a repressible operon and an inducible operon?

What are some similarities between repressible and inducible operons?

*pGlo:*

What role did an operon play in the pGlo lab?

Which plates had bacterial growth on them and why?

What was the selectable marker used in the pGlo lab?

*Viruses:*

What is the basic structure of a virus?

What is a phage? What type of organisms does it infect?

How can a virus introduce variation into a species?

How does a virus replicate?

How does HIV, a retrovirus, differ in its “life cycle” in a cell than other eukaryotic viruses?

*GMOs:*

What is a GMO?

What are some benefits and drawbacks to the use of GMOs?

*Restriction Enzymes and Mapping:*

What is a restriction map of a plasmid?

Can you make one from a given set of fragment lengths?