

Gel Electrophoresis Quiz PDF

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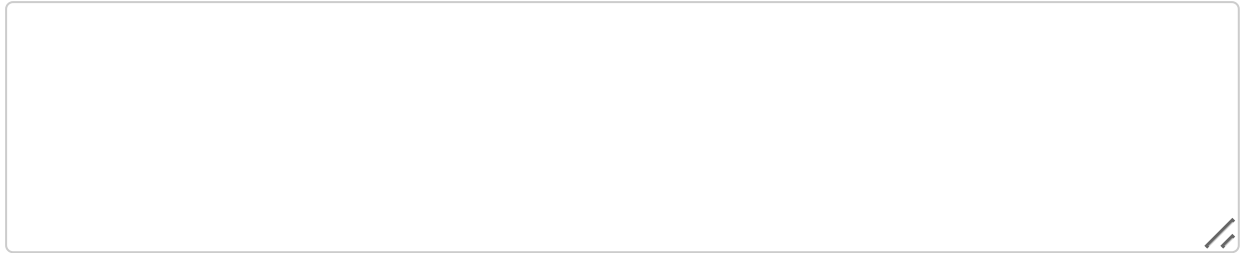
What is the primary purpose of gel electrophoresis?

- To amplify DNA
- To separate molecules based on size and charge
- To sequence DNA
- To clone genes

What are the steps involved in loading samples into a gel for electrophoresis?

Discuss the importance of using a buffer solution in gel electrophoresis.

Describe the process of preparing a gel for electrophoresis.



Which type of gel is commonly used for DNA separation?

- Polyacrylamide
- Agarose
- Starch
- Cellulose

What is used to visualize DNA bands in gel electrophoresis?

- Methylene blue
- Ethidium bromide
- Coomassie blue
- Silver stain

What factors can affect the migration of molecules in gel electrophoresis?

- Voltage applied
- Gel concentration
- Temperature
- Sample volume

What are common issues that can occur during gel electrophoresis?

- Smearing bands
- No bands appearing
- Bands too bright
- Bands running off the gel

In gel electrophoresis, what role does the buffer solution play?

- It stains the DNA
- It conducts electricity and maintains pH
- It solidifies the gel

- It breaks down DNA

Which technique is used to analyze differences in homologous DNA sequences?

- PCR
 RFLP Analysis
 Western Blotting
 Southern Blotting

What is the typical outcome when smaller molecules are subjected to gel electrophoresis?

- They move slower
 They move faster
 They remain stationary
 They degrade

How can the results of gel electrophoresis be used in forensic science?

Which of the following are types of gel electrophoresis?

- Agarose Gel Electrophoresis
 Polyacrylamide Gel Electrophoresis
 Starch Gel Electrophoresis
 Cellulose Gel Electrophoresis

Which components are necessary for setting up a gel electrophoresis experiment?

- Gel matrix
 Electric field
 Buffer solution
 Centrifuge

Explain the principle behind the separation of molecules in gel electrophoresis.

Which of the following is NOT a component of gel electrophoresis?

- Gel matrix
- Electric field
- Centrifuge
- Buffer solution

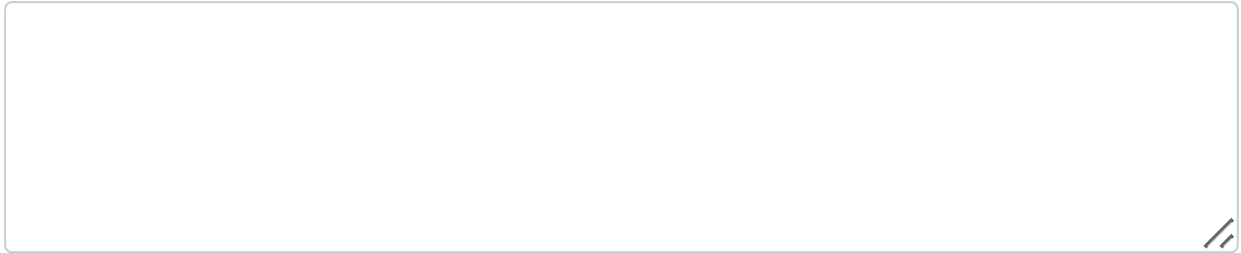
What are the advantages of using polyacrylamide gels over agarose gels?

- Higher resolution for smaller molecules
- Easier to prepare
- Suitable for protein separation
- Less toxic

What is the primary reason for using a standard ladder in gel electrophoresis?

- To stain the gel
- To compare molecular sizes
- To increase voltage
- To decrease running time

Identify and explain two common troubleshooting techniques for resolving issues with unclear bands in gel electrophoresis.

**Which applications utilize gel electrophoresis?**

- DNA fingerprint
- Protein analysis
- Gene cloning
- Genetic research