

## STUDY GUIDE: DNA Technology

### Key Terms

recombinant DNA technology  
biotechnology  
restriction enzymes  
"sticky" ends  
ligase  
gel electrophoresis  
transformation  
artificial transformation  
DNA fingerprinting

gene cloning  
gene library  
copy DNA(=cDNA)  
genetic probe  
DNA sequencing  
DNA hybridization  
PCR  
RLFPs

### Questions

1. Describe the process involved in inserting the genes from one kind of organism into cells of another kind of organism.
2. Describe how a gene from humans can be inserted into a bacteria.
3. Which electrode do DNA fragments migrate toward(anode(-) or cathode(+))? Why?
4. How do restriction enzymes recognize a restriction site?
5. What is a palindrome? Why is this term used in relation to restriction enzymes?
6. Why is copy DNA missing the introns?
7. What do the letters PCR stand for?
8. What are the steps in using PCR to make copies of a gene?
9. What kind of DNA polymerases are used in PCR?
10. Describe how RLFPs and gel electrophoresis can be used to develop a "DNA fingerprint".
11. Summarize the ethical and other objections that have been raised against recombinant DNA studies, and give practical and research applications of recombinant DNA.