

## Chapter 9

Names: \_\_\_\_\_

1. What do molecular biologists mean when they say “cloning”? Explain the steps involved **in your own words**.
2. What is a plasmid? Why are they useful to molecular biologists?
3. What is a restriction enzyme? How are they used in molecular biology to make a chimeric plasmid? What is meant by "sticky ends" and "blunt ends"?
4. What does “to transform” mean in molecular biology? How do you test the success of a transformation? Refer to Fig. 9-4.
5. What is bacteriophage  $\lambda$ ? How and why is it used in cloning?
6. What is a YAC and what is it used for?
7. What is "hybridization"? Why is it needed? How can you make a probe? Refer to Fig. 9-8 and 9-9.
8. Define site-directed mutagenesis and briefly explain how it is done. Refer to Fig. 9-11.
9. What is a cDNA library? Why is this more useful than a genomic library? How is a cDNA library produced? Refer to Fig. 9-14.
10. What is PCR? How does it work? What happens in each cycle? What is it used for? Refer to Fig. 9-16.
11. Explain the technique of Southern blotting. See pages 319-320.
12. Define proteome.