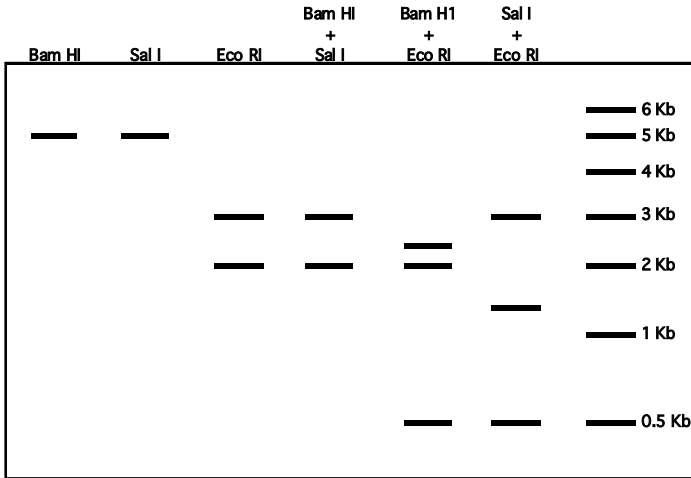


IMBBR 315 Quiz # 3 (Feb. 25, 2003)

Name \_\_\_\_\_ Lab (day) \_\_\_\_\_

1. A 2-Kb Eco RI fragment of DNA is cloned into the unique Eco RI site of a plasmid vector. A student digests the clone with the following restriction enzymes: Eco RI, Bam HI, Sal I, Eco RI + Sal I, Eco RI + Bam HI, Sal I + Bam HI. The pattern of restriction fragments seen on a gel is shown on the diagram below.



- A. (2 pts.) What is the size (in Kb) of the plasmid vector (before the 2 Kb Eco RI fragment was cloned into it)?
- B. (6 pts.) Draw a circular map of the clone (plasmid vector + insert). Label the insert. Label all of the restriction sites. Indicate the distances (in Kb) between each restriction site.

Name \_\_\_\_\_

2. A standard PCR amplification cycle looks like this:

94°C for 1 minute }  
50°C for 1 minute } Repeat for 30 cycles  
72°C for 1 minute }

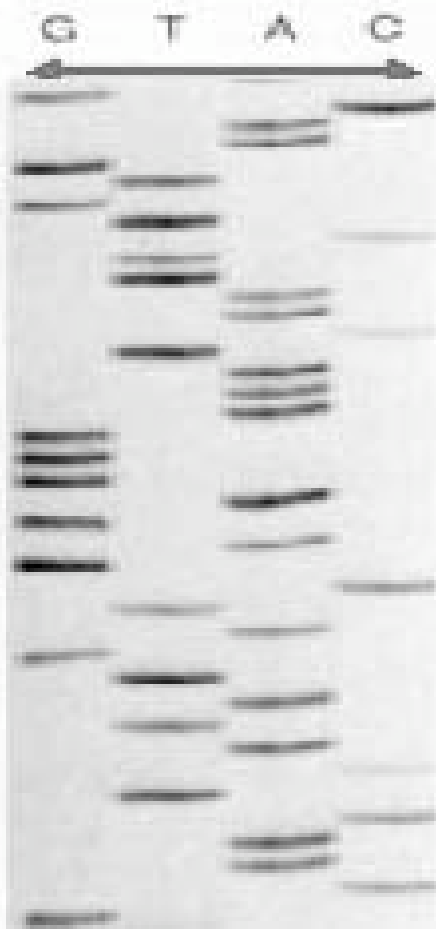
A. (2 pts.) What is the purpose of the 94°C step?

B. (2 pts.) What is the purpose of the 72°C step?

C. (2 pts.) What is the name of the DNA polymerase enzyme that synthesizes DNA in this reaction?

Name \_\_\_\_\_

3. This is an autoradiogram of a dideoxy-DNA sequencing experiment:



A. (8 pts.) Write the above DNA sequence (in the 5'-3' direction) from reading this autoradiogram. In addition, label the 5' and 3' ends of your sequence.

B. (3 pts.) Why causes DNA synthesis to stop in each of the four above reactions.