

BIO 203-Midterm

M.C.Q

- _____ an enzyme derived from the bacterium *Thermus aquaticus*. **Taq polymerase**
- PCR can be performed to amplify _____. **DNA.**
- The denaturation temperature ranges from _____. **93°C - 98°C**
- During extension the most common temperature is _____. **72°C**
- Which step the DNA polymerase synthesizes a new DNA strand complementary to the DNA template strand by adding dNTP's? **Extension**
- The thermocycler works on the principle of _____ which raises and lowers the temperature of the block in a pre-programmed manner. **Peltier effect**
- Primers are single stranded _____ bp long DNA fragments. **18-30**
- Which one of the following determine the specificity of the PCR reaction? **Primer**
- FORMULA FOR CALCULATING MELTING TEMPERATURE OF PRIMERS. **$T_m = 4(G+C) + 2(A+T)$**
- The extension rate of Taq polymerase _____. **75 nt/sec**
- Which one of the following is good or perfectly matched primers between 19-24 nt? **94-55-72**
- Misprimers may occur due to non-specific _____ of primers. **Hybridization**
- Controls for contamination contains all reagents except DNA template is called _____. **Blank reaction**
- Two pairs (instead of one pair) of PCR primers are used to amplify a fragment _____. **NESTED PCR**
- Which type of PCR has Very low probability of nonspecific amplification? **NESTED PCR**
- _____ is a variant of PCR which enables simultaneous amplification of many targets of interest in one reaction by using more than one pair of primers. **Multiplex PCR**
- Which temperatures for each of the primer sets must be optimized to work correctly within a single reaction? **Annealing**
- Amplicon sizes should be different enough to form distinct bands when visualized by _____. **gel electrophoresis**
- The enzyme used to convert RNA into cDNA _____. **Reverse transcriptase**
- Which types of PCR is widely used in expression profiling, to determine the expression of a gene? **RT-PCR**

21. _____ is used to measure the quantity of a PCR product. **Real Time PCR**
22. Which is a technique that reduces nonspecific amplification during the initial set up stages of the PCR? **Hot start PCR**
23. Allele-specific PCR used for identifying of _____ **SNPs**
24. In Situ PCR (ISH) is a polymerase chain reaction that actually takes place inside the **cell** on a slide.
25. Flanking DNA sequences are digested and then ligated to generate _____ **Circular DNA**
26. A method used to allow PCR when only one internal sequence is known _____ **Inverse PCR**
27. AFLP stands for _____ **Amplified Fragment Length Polymorphism**
28. _____ is a highly sensitive PCR-based method for detecting, polymorphisms in DNA. **AFLP**
29. _____ is a group of procedures that allow amplification to occur at many locations in a genome. **Whole genome amplification**
30. In Mini Primer PCR the thermostable enzyme extend primer consist _____ nucleotides. **9 or 10**
31. PCR has been used in gene cloning and screening of _____ **Genomic libraries**
32. _____ is the application of scientific procedures to solve criminal and legal matters. **Forensic Science**
33. _____ is a forensic technique used to identify individuals by characteristics of their DNA. **DNA profiling or DNA fingerprinting**