

# BIO 203-Midterm

## M.C.Q

1. \_\_\_\_\_ an enzyme derived from the bacterium *Thermus aquaticus*. **Taq polymerase**
2. PCR can be performed to amplify \_\_\_\_\_ **DNA.**
3. The denaturation temperature ranges from \_\_\_\_\_ **93°C - 98°C**
4. During extension the most common temperature is \_\_\_\_\_ **72°C**
5. Which step the DNA polymerase synthesizes a new DNA strand complementary to the DNA template strand by adding dNTP's? **Extension**
6. The thermocycler works on the principle of \_\_\_\_\_ which raises and lowers the temperature of the block in a pre-programmed manner. **Peltier effect**
7. Primers are single stranded \_\_\_\_\_ bp long DNA fragments. **18-30**
8. Which one of the following determine the specificity of the PCR reaction? **Primer**
9. FORMULA FOR CALCULATING MELTING TEMPERATURE OF PRIMERS.  **$T_m = 4(G+C) + 2(A+T)$**
10. The extension rate of Taq polymerase \_\_\_\_\_ **75 nt/sec**
11. Which one of the following is good or perfectly matched primers between 19-24 nt? **94-55-72**
12. Misprimers may occur due to non-specific \_\_\_\_\_ of primers. **Hybridization**
13. Controls for contamination contains all reagents except DNA template is called \_\_\_\_\_ **Blank reaction**
14. Two pairs (instead of one pair) of PCR primers are used to amplify a fragment \_\_\_\_\_ **NESTED PCR**
15. Which type of PCR has Very low probability of nonspecific amplification? **NESTED PCR**
16. \_\_\_\_\_ 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**
17. Which temperatures for each of the primer sets must be optimized to work correctly within a single reaction? **Annealing**
18. Amplicon sizes should be different enough to form distinct bands when visualized by \_\_\_\_\_ **gel electrophoresis**
19. The enzyme used to convert RNA into cDNA \_\_\_\_\_ **Reverse transcriptase**
20. 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**