Ahmedabad University

School of Arts and Sciences

BIO554 FORENSIC BIOTECHNOLOGY

Mid Term Examination 2022 (Monsoon Semester)

Time: 1:00 hrs **M.M. 20**

Enrolment Number:.....
Date: 20-09-2022
No. of printed pages: 2

Instruction for Question 1-10: Choose the correct option to the following Questions. (1X10=10)

1. The analysis of VNTR alleles in forensic DNA profile analysis is based on what common method of molecular biology?
   A. Cloning
   B. ELISA
   C. RAPD
   D. Southern Blot

2. Live forensic is
   A. examination of databases and their metadata
   B. analysis on active system
   C. monitoring and analysis of computer network
   D. identify and store evidence from a computer device

3. RAPD technique is applied for
   A. Paternity testing
   B. Individual identification
   C. Entomological investigation
   D. Paternal lineage analysis

4. Which of the following method is NOT used for collecting Hair sample as physical evidence?
   A. Lifting
   B. Transfer
   C. Vacuum
   D. Swabbing

5. CODIS Stands for
   A. Complete DNA Identification System
   B. Combined DNA Identification System
   C. Complete DNA Individualizing System
   D. Combined DNA Individualizing System

6. Which of the following statement is CORRECT for Multi locus probe
   A. Can detect multiple VNTR loci
   B. Has excellent power of discrimination
   C. Are unable to interpret mixed DNA sample
   D. All of the above

7. Second Generation Multiplex STR system is comprised of ……..STR loci
   A. 4
   B. 5
   C. 6
   D. 7

8. Which of the following artifact is NOT as a result of amplification?
   A. Stuttering
   B. Spikes
   C. Heterozygote Imbalance
   D. Allelic Dropout

9. Which of the following can be a PCR Inhibitor.
   A. Polysaccharides
   B. Mg2+
   C. LiCl
   D. Proteinase K

10. In STR Profiling, Allelic Ladder is used to
    A. Determine the size of alleles
    B. Establish the location of alleles
    C. Identify the frequency of alleles
    D. None of the above

11. Why tetrameric repetitive sequence of STR loci are most commonly used for STR profiling? **(1)**
12. What are the challenges in VNTR Profiling? **(2)**

13. Write a short note on **(1.5+1.5=3)**
    A. PCR Inhibitor
    B. Multiplex PCR

14. How can artifacts affect to the results of DNA Fingerprinting? Explain. **(2+2=4)**