

Continuing Education Questions

SPRING 2012

1. Forensic scientists:
 - a. Are law enforcement agents.
 - b. Collect evidence at crime scenes.
 - c. Are not required to testify in courts of law.
 - d. Must maintain chain of custody of physical evidence.
2. Forensic laboratories in the United States are:
 - a. Primarily public laboratories .
 - b. Part of a national network of laboratories.
 - c. Regulated by the Federal Bureau of Investigation.
 - d. Required to perform DNA and toxicology analyses.
3. Source of DNA in a blood sample:
 - a. Serum.
 - b. Platelets.
 - c. White blood cells.
 - d. Red blood cells.
4. In forensic DNA analysis, this gene is able to distinguish between male and female contributors.
 - a. D1S80.
 - b. HLA DAQ1.
 - c. Amelogenin.
 - d. AFLP.
5. Mitochondrial DNA:
 - a. Is more likely to be found at crime scenes than nuclear DNA.
 - b. Has a paternal pattern of inheritance.
 - c. Is not present in hair roots.
 - d. All of the above.
6. Today, the United States' Combined DNA Index System only accepts which of the following DNA profiles?
 - a. Mitochondrial DNA sequencing.
 - b. Polymerase chain reaction (PCR) of short tandem repeats.
 - c. Restriction fragment length polymorphism (RFLP) of variable number of tandem repeats.
 - d. Both PCR of short tandem repeats and RFLP of variable number of tandem repeats.
7. Which of the following DNA profiling methods is most applicable for use on degraded DNA?
 - a. Polymerase chain reaction of short tandem repeats.
 - b. Polymerase chain reaction of amplified fragment length polymorphisms.
 - c. Restriction fragment length polymorphism of variable number of tandem repeats.
 - d. Restriction fragment length polymorphism of amplified fragment length polymorphisms.
8. Different short tandem repeat alleles at the same locus are determined by the:
 - a. Different nucleotides contained within the tandem repeat.
 - b. Number of nucleotides between the tandem repeat.
 - c. Number of times the tandem sequence is repeated.
 - d. Number of base pairs within each tandem repeat.
9. In the Laboratory Response Network, the primary role of a clinical microbiology laboratory in handling a potential agent of bioterror is:
 - a. Perform antimicrobial susceptibility testing.
 - b. Accurately and completely identify the agent.
 - c. Send the isolate to a federal laboratory for identification.
 - d. Rule out bioterror agents by performing a minimal number of tests.

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10. Determining the “microbial signature” of bacteria used in a bioterrorist attack is generally based on:
 - a. Surface antigens.
 - b. Genotype variation.
 - c. Biochemical reactions.
 - d. The stable isotope ratio.
11. The presence of bacterioplankton in the liver and kidneys of a decedent:
 - a. Indicates death by drowning.
 - b. Is useful in determining the postmortem interval.
 - c. Is characteristic of a sudden unexplained death in an infant.
 - d. Suggests that the victim was placed in a body of water after death.
12. What is a difficulty in detecting bacteria to determine infectious disease as a cause of death in cases of sudden infant death syndrome?
 - a. Detection methods take too long to complete.
 - b. Bacteria are not known to cause sudden infant death syndrome.
 - c. Some bacteria are fragile and are undetectable a few days after death.
 - d. Body tissue rapidly becomes contaminated soon after death.
13. Which of the following is (are) an advantage of testing for fecal bacteria instead of diatoms in tissue of a suspected drowning victim?
 - a. Because of their smaller size, fecal bacteria penetrate the alveoli more readily.
 - b. Fecal bacteria are less prevalent outside water sources.
 - c. Tests for bacteria are easier to perform.
 - d. All of the above.
14. The history provided with a urine specimen indicates that the patient was dumped from a car outside the emergency department door with a belt cinched around his forearm and bleeding from a punctuate mark on his left forearm. A urine drug screen is most likely to detect:
 - a. Amphetamines.
 - b. Barbiturates.
 - c. Benzodiazepines.
 - d. Opiates.
15. In order for a laboratory to follow proper procedures for chain of evidence (custody), a blood specimen must be:
 - a. Labeled with the name of the patient from whom the specimen came.
 - b. Labeled with the names of the patient and the phlebotomist.
 - c. Properly identified and secured with a list showing all transfers.
 - d. Properly identified and under constant watch for security.
16. Death most alters the concentration of a drug in blood by:
 - a. Ending the constant mixing of blood.
 - b. Slowing active metabolism of drug.
 - c. Reversing peristalsis and drug absorption.
 - d. Allowing endogenous microflora to eliminate drugs.
17. Decomposition most alters the concentration of a drug in blood by:
 - a. The combined effects of hemolysis and dehydration.
 - b. Causing release of molecules bound to albumin.
 - c. Releasing catabolic enzymes from the pancreas.
 - d. Allowing release of drug from the liver.
18. The best anticoagulant for preservation of cocaine in a blood sample is:
 - a. Sodium citrate.
 - b. Sodium fluoride.
 - c. Heparin.
 - d. EDTA.
19. An autopsy permit restricts the autopsy to opening the abdomen, visualizing the liver, and taking biopsies of the liver. Given these restrictions, which of the following can be obtained as a specimen or specimens for toxicology testing?
 - a. Liver only.
 - b. Liver and bile.
 - c. Liver and blood from the inferior vena cava.
 - d. Liver, bile, and blood.

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20. Laboratory scientists may be compelled to testify concerning the results of their analysis under the authority of the:
 - a. Law of the state in which the laboratory resides.
 - b. Joint Commission quality assurance requirements.
 - c. Rights guaranteed by the United States Constitution.
 - d. Clinical Laboratory Improvement Amendments.

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