FOCUS: FORENSIC SCIENCE

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.
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.
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.
   d. Clinical Laboratory Improvement Amendments.
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2. a  b  c  d    13. a  b  c  d
3. a  b  c  d    14. a  b  c  d
4. a  b  c  d    15. a  b  c  d
5. a  b  c  d    16. a  b  c  d
6. a  b  c  d    17. a  b  c  d
7. a  b  c  d    18. a  b  c  d
8. a  b  c  d    19. a  b  c  d
9. a  b  c  d    20. a  b  c  d
10. a  b  c  d
11. a  b  c  d

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3. How long did it take you to complete both the reading and the quiz? _______ minutes

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