Forensic Science

Final Exam Review

1. Know the basics about what forensic science is.
2. Know the basics about gathering evidence at a crime scene.
3. What is most important
4. What should be done first
5. Who is responsible for what
6. How things should be packaged
7. How notes should be taken
8. Chain of custody
9. Final evaluator of forensic evidence
10. Which amendment of the Constitution be upheld in the removal of evidence from a person or a crime scene?
11. What justifies a warrantless search?
12. Know the factors that affect the rate of cooling of a body once death has occurred.
13. What happens to the potassium levels in the vitreous humor of the eye as time increase post mortem?
14. What are the requirements for an expert witness?
15. Historical figures in Forensic Science:
16. Galton
17. Goddard
18. Locard
19. Bertillon
20. Orfilia
21. Lattes
22. Gross
23. Branches of Forensics
24. Toxicology
25. Ballistics
26. Serology
27. Know what the following terms refer to:
28. Rigor mortis
29. Liver mortis
30. Floatation
31. Refraction
32. Becke Lines
33. Isotopes
34. Atoms
35. Matter
36. Medullary Index
37. When a search warrant is needed and when one isn’t needed
38. Main ingredient in ordinary glass is \_\_\_.
39. Logical first step in soil analysis is \_\_\_.
40. What happens to an object when it is placed in a liquid that has a greater density that the object itself?
41. What is refractive index?
42. What does refractive index measure?
43. Know the relationship between the types of glass fractures and the side of impact.
44. Be able to look at a glass fracture and determine the order of the series of impacts
45. Be able to describe the two types of glass fracture and describe what can be determined from each type
46. Know what a qualitative test reveals.
47. Know the basics about the following analytical techniques
48. TLC
49. Spectrophotometry
50. Chromatography in general
51. Electrophoresis
52. Neutron Activation Analysis
53. Pyrolysis GC
54. HPLC
55. GC
56. IR Spec
57. UV Spec
58. Emission Spectroscopy
59. Which color of light has the highest frequency and the shortest wavelength?
60. How do radio waves compare to X-rays as far as energy?
61. Be able to define what an isotope is.
62. By what type of means are compounds separated, chemical or physical?
63. Know the basics about the following types of microscopes:
64. Polarizing
65. Comparison
66. Compound
67. Stereoscopic
68. Scanning Electron Microscope (SEM)
69. Parfocal Microscopes
70. Know the relationship between magnifying power and depth of focus
71. Know the relationship between magnification and field of view
72. Know how to determine magnification
73. Which type of microscope is best suited for the study of birefringent minerals and fibers?
74. Which type of microscope provides the highest resolution and greatest depth of focus?
75. Which type of microscope has the largest potential working distance?
76. Which microscope is most likely used to as a tool to determine whether a suspect has recently fired a gun?
77. Which type of microscope can be linked to an X-ray analyzer?
78. Which property of paint is most valuable to forensic scientists?
79. Know the parts of the hair and the characteristics that are important to forensics
80. Know the following fiber terms:
81. Regenerated fiber
82. Synthetic fibers
83. First manmade fiber
84. Which type of fiber(s)…
85. Has a microscopic appearance of being ribbon-like in shape and twists at irregular intervals?
86. Are synthetic?
87. Was the first man-made fiber?
88. Is made of natural polymers?
89. How does the medullary index of a human hair compare to that of most other animals?
90. Which property/properties should be examined when comparing two fibers?
91. Cellulose is a component of which fibers?
92. What is the most prevalent plant fiber?
93. During which stage of hair growth is nuclear DNA typing most successfully accomplished?
94. Which race has a continuous medullae?
95. Which characteristic of hair is the MOST important consideration in determining whether the hair originated from a male or female?
96. Which race has a hair that would appear to be flat in shape when examining a cross-section?
97. What are regenerated fibers generated from?
98. Know what tools/steps can be used to examine fibers for the purpose of identification and comparison.
99. Which part of the hair shaft is most resistant to chemical decomposition?
100. Where are pigment granules found in a hair?
101. During which stage of growth can a hair most readily be removed from the scalp?
102. How do sheath cells compare between hairs that were removed from the scalp quickly as opposed to being removed slowly?
103. From what animal are mohair and cashmere taken?
104. Which feature is most important in making species comparisons?
105. What can be determined from information about paint chips and automobiles can be derived from the PDQ database?
106. Know the basic parts of paint. Know the properties and functions of each.
107. Which type of crime is paint evidence most frequently encountered?
108. Know the following about proteins:
109. Monomer of proteins
110. What percentage of evidence evaluated in a crime lab is drug-related?
111. What are the criteria for the classification according to the Controlled Substances Act?
112. Know the effects and/or examples of :
113. Barbiturates
114. Stimulants
115. Hallucinogens
116. Depressants
117. Narcotics
118. Steroids
119. Mild tranquilizers
120. Marijuana
121. Low doses of alcohol
122. Know which drugs are opium derivatives
123. What drug is given to people that are coming off of heroin?
124. What is the most widely used and abused drug?
125. What is the pattern and intensity of dependency on a drug depend on?
126. What is the first logical test used by a drug analyst?
127. Which test is used to analyze BAC?
128. What is the maximum allowable BAC for drivers?
129. What is the most difficult drug addiction to overcome?
130. What is the most widely used illicit drug in the United States?
131. What is the relationship between BAC and the amount of alcohol in alveolar breath?
132. How does the rate of alcohol absorption on full stomach compare to the rate on an empty stomach?
133. What does a field sobriety test include?
134. What is the relationship between the BAC and the amount of alcohol in the brain?
135. List the three ways by which alcohol is eliminated from the body.
136. List the factors which determine the rate at which alcohol is absorbed into the bloodstream
137. Which system carries alcohol throughout the human body?
138. Which drug acts on the CNS by increasing the production of the neurotransmitter GABA?
139. Know the meaning of the following terms:
140. Oxidation
141. Endothermic reaction
142. Exothermic reaction
143. Spontaneous combustion
144. Glowing combustion
145. Deflagration
146. Pyrolysis
147. Flash point
148. Ignition temperature
149. Heat of combustion
150. Modus operandi
151. List the high explosives. What are the characteristics of their explosion?
152. List the low explosives. What are the characteristics of their explosion?
153. What is the first focus in the search of a fire scene?
154. Do all oxidation reactions produce noticeable quantities of heat and light?
155. How are oxidation reactions classified? What does this mean?
156. Is a search warrant needed for an immediate search of a crime scene?
157. How can one determine the probable origin of a fire?
158. What state of matter must fuel be in for oxidation to occur?
159. What do oxidizing agents supply to a chemical reaction?
160. What is the comparison between an exothermic reaction and temperature?
161. Give an example of glowing combustion
162. What two things does a fire need in order to continue to burn?
163. What can an investigator identify while investigating an arson and explosion?
164. How can one determine whether or not an accelerant was used in a fire?
165. How does fire generally tend to move?
166. What are the most common material(s) used by arsonists to ensure the rapid spread of a fire?
167. What type of explosives decompose at a relatively slow rate?
168. When does a low explosive become explosive and lethal?
169. How are automobile bombs detonated?
170. What is the most common finger print ridge pattern?
171. What are the two most common ridge characteristics?
172. Where are the pore of the sweat glands located?
173. When are fingerprints formed?
174. What is AFIS?
175. What are latent prints?
176. Do any two people EVER have matching fingerprints?
177. What does ninhydrin detect in latent fingerprints?
178. What must be permanently damaged in order alter fingerprints?
179. Who devised the first fingerprint classification system?
180. What aspect of fingerprints are compared in proving identity using fingerprints?
181. What is at the approximate center of a loop pattern fingerprint?
182. What is the least common type of fingerprint?
183. The presence or absence of what characteristic is used in the Henry System?
184. Which technique used vapors that are not permanent to develop fingerprints? These fingerprints disappear.
185. Which technique is used to develop fingerprints on porous materials by reacting with the amino acids left in the perspiration?
186. This technique is used on non-porous substances by using cyanoacrylate vapors.
187. Which test is used to determine whether or not a bloodstain is of human or animal origin?
188. Which test is used to determine whether or not a bloodstain is present?
189. What is located on the surface of a red blood cell that determine the type of blood according to the ABO typing system?
190. Know the possible genotypes, inheritance patterns, antigens and antibodies present of the following blood types:
191. A
192. B
193. AB
194. O
195. Which blood type is the universal donor?
196. Which part of human blood fights off infection and can be used to forensically individualize a person?
197. Which two molecules make up the backbone on the DNA molecule?
198. What is the monomer of DNA?
199. What are the 3 parts of a nucleotide?
200. What determines the order of the amino acids in a protein?
201. How many bases code for ONE amino acid?
202. What is the amelogenin gene in commercial STR kits used to determine?
203. What happens to DNA during gel electrophoresis?
204. How is DNA classified? List the bases found in DNA.
205. What are the base pairing in DNA?
206. What determines the individuality of an organism with respect to DNA?
207. What is PCR used for?
208. What does a restriction enzyme do?
209. What does blood do in response to an anti-serum?