**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU - 27**

**BIOCHEMISTRY – OPEN ELECTIVE**

**SEMESTER EXAMINATION: APRIL 2023**

**(Examination conducted in May 2023)**

**BCHOE 1 – Introduction to Forensic science**

**Time: 2 Hours Max Marks: 60**

**This paper contains 9 printed pages**

**Answer all the questions, each question carries one mark**

1. Forensic science is
2. Application of scientific methods and techniques for the purpose of justice
3. Application of scientific methods and techniques for the purpose of law
4. Application of scientific methods and techniques for police investigation
5. Application of scientific methods and techniques in criminal investigation.
6. Laws are needed to
7. Prevent chaos and ensure that things don’t go out of hand.
8. Regulate the quality and quantity of food
9. Regulate purity of drinking water
10. All options
11. Locard’s exchange principle implies all of the following except:
12. Fibers can be transferred from one person’s clothing to another.
13. Blood at a crime scene can be used to identify blood type.
14. Hair from your pet may be transferred to your clothing.
15. Pollen from plants in your yard may be found on your shoes.
16. The first man to introduce chemical analysis as a routine part of forensic medicine
17. Mathieu Joseph Bonaventure Orfila
18. Alphonse Bertillone
19. Francis Galton
20. Leonine Lattes
21. The Question Document Unit of a Crime Lab will do which of the following?
22. Determine the authenticity and source of questioned documents
23. Check for handwriting and indented writing on documents
24. Use paper and ink analysis to analyse the documents
25. All options
26. The first Central Forensic Science Lab (CFSL) was established in
27. Calcutta
28. Hyderabad
29. Chandigarh
30. Shimla
31. The 1st Government Examiner of Q.D (Questioned Documents) was initiated in
32. Shimla
33. Calcutta
34. Hyderabad
35. Delhi
36. Most wrongful convictions seem to be the result of:
37. Improper evidence collection
38. Incorrect interpretation of evidence
39. Tampering of evidence
40. All options
41. When it comes to securing and isolating a crime scene, which of the following is true?
    1. Only authorized personnel should be allowed on the scene.
    2. Every person who enters the scene is a potential destroyer of viable physical evidence.
    3. Physical evidence should be marked off.
    4. All of them.
42. What involves the use of scientific methods, physical evidence, deductive reasoning and their interrelationships to gain explicit knowledge of the series of events that surround the commission of the crime.
43. Scientific interrogation
44. Scientific investigation
45. Crime scene investigation
46. Crime investigation
47. Which of the following search methods usually carried out by a single person involves the searcher walking in a circular fashion from the outer point of the crime scene towards the central point
48. Grid search method
49. Point to point search
50. Spiral search method
51. Wheel search method
52. Arrange the following evidence types in the correct order of priority for collection and preservation at a crime scene
53. Documentary
54. Transient (evidence lasting only for a short time)
55. Latent (invisible evidence)
56. Biological
57. II, IV, I, III
58. IV, I, II,III
59. III, IV, II, I
60. II, IV, III, I
61. Choose the correct answer for the steps of investigation in proper sequence:
62. Protection of crime scene, interview of witness, photography of crime scene, collection and dispatch of physical evidence.
63. Photography of crime scene, protection of crime scene, interview of witness, collection and dispatch of physical evidence.
64. Protection of crime scene, photography of crime scene, collection and dispatch of physical evidence, interview of witness.
65. Interview of witness, photography of crime scene, collection and dispatch of physical evidence, protection of crime scene.
66. Which of the following is the least reliable source of evidence?
67. DNA
68. Fingerprints
69. Eye witness
70. Blood
71. Blood-stained materials should be store in what type of container?
72. Paper bags
73. Mason jar with a lid
74. Air tight new paint can
75. Plastic bag with a seal
76. Who authored the very first forensic science novel based on the Sherlock Holmes character?
77. Sir Arthur Holmes Doyle
78. Sir Arthur Brown Doyle
79. Sir Arthur Walker Doyle
80. Sir Arthur Conan Doyle
81. The phrase “nature versus nurture” was coined by
82. Edmond Locard
83. Francis Galton
84. Alphonse Bertillon
85. Albert S Osborn
86. Benzidine test is obsolete because
87. Chemicals are toxic
88. Chemicals are costlier
89. Chemicals are readily available
90. All options
91. In chromatography retention factor (Rf) is calculated by
92. Distance travelled by the solvent divided by distance travelled by the sample
93. Distance travelled by the sample divided by distance travelled by the solvent
94. Distance travelled by the solvent alone
95. Distance travelled by the sample alone
96. Who first identified A, B & O blood types
97. Alphonse Bertillon
98. Leonine Lattes
99. Calvin Goddard
100. Karl Landsteiner
101. According to Greeks matter was made of how many elements?
102. 2
103. 4
104. 3
105. 6
106. Radiocarbon (14C) dating is used to determine
107. Height of an object
108. Age of an object
109. Weight of an object
110. Volume of an object
111. The meaning of ACTUS REUS is
112. Guilty action
113. Guilty mind
114. Guilty intention
115. None of the option.
116. The trace impurities found in bullets are
117. Silver and antimony
118. Silver and gold
119. Copper and gold
120. Copper and antimony
121. One nanogram is:
122. 10-6 g
123. 10-9 g
124. 10-3 g
125. 10-12 g
126. The phenomenon of splitting of light into its constituent colours was first observed by
127. Fraunhofer
128. Lockyer
129. Newton
130. Bohr
131. The presence of a functional group in a compound can be established by using
132. Chromatography
133. Mass spectroscopy
134. SEM-EDX
135. IR spectroscopy
136. Absorption spectrum results when an electron in an atom undergoes transition from
137. Higher energy level to a lower one
138. Lower energy level to a higher one
139. Intermediate energy levels
140. None of the energy levels
141. Which among the following rays have the lowest energy?
142. Radio waves
143. Gamma rays
144. Visible rays
145. X rays
146. Which of the following has a positive charge?
147. Proton
148. Neutron
149. Electron
150. Atom
151. In flame emission photometers, the measurement of \_\_\_\_\_ and \_\_\_\_\_ is used for analysis
152. Colour and Intensity
153. Colour and Velocity
154. Colour and Frequency
155. Colour and wavelength
156. Which of the following imparts brick red colour to the flame?
157. Barium
158. Sodium
159. Calcium
160. Strontium
161. Acronym SEM-EDX stands for:
162. Scanning Electron Microscope-Energy Dispersive X-ray
163. Scanning Emission Microscope-Energy Dispersive X-ray
164. Scanning Excitation Microscope-Energy Diffraction X-ray
165. Scanning Electric Microscope-Electron Diffraction X-ray
166. In thin layer chromatography, the stationary phase and mobile phase is made of:
167. Liquid, gas
168. Liquid, liquid
169. Solid, liquid
170. Solid, gas
171. In which state of matter the mass spectrometry is being performed?
172. Solid
173. Vapour
174. Liquid
175. Plasma
176. Algor mortis stands for
177. Cooling of the body after death
178. Rigidity in the body after death
179. Heating up of the body after death
180. Blackening of body after death
181. Putrefaction is a
182. Immediate sign of death
183. Early sign of death
184. onset of death
185. Late sign of death
186. Forensic Entomology involves study of
187. Insects
188. Angles of blood spatter
189. Velocity of blood
190. Shape of blood
191. A forensic scientist is supposed to answer the question when examining the dried blood
192. Is it blood?
193. Is it human blood?
194. Which group does it belong?
195. All the options
196. What information can be furnished by a blood-stained fingerprint on the table?
197. Fingerprint pattern
198. Blood group of suspect
199. Cause of death
200. Time since death
201. I & II
202. II & III
203. III & IV
204. I & IV
205. Which of the following bases is not present in DNA?
206. Adenine
207. Guanine
208. Thymine
209. Uracil
210. What is the full form of DNA?
211. Degenerative acid
212. Deoxyribonucleic acid
213. Deadly nucleic acid
214. Disoriented acid
215. The technique used to distinguish the individuals based on their DNA print patterns is called
216. DNA profiling
217. Polymerase chain reaction (PCR)
218. Restriction fragment length polymorphism (RFLP)
219. Short Tandem Repeats (STRs)
220. Which of the following endonucleases is useful to cut DNA into fragments?
221. Scissor
222. Sensor
223. Freedom
224. Restriction
225. The DNA fingerprint pattern of a child is
226. Exactly similar to that of both parents
227. 100% similar to the fathers DNA print
228. 100% similar to the mothers DNA print
229. 50% bands similar to father and rest similar to mother
230. PCR technique was developed by
231. Mullis
232. Kohler
233. Milstein
234. Altman
235. Which of the following is not a step of PCR?
236. Annealing
237. Denaturation
238. Extension
239. Laser detection
240. What does STR stand for?
241. simple transfer rods
242. short term reflex
243. short tandem repeats
244. simple tandem repeats
245. What is a STR?
246. Regulated cell division
247. Hereditary molecules passed from parent to offspring
248. Sections of a chromosome in which DNA sequences are repeated
249. Making an identical copy of a DNA molecule
250. Which technique separates charged particles using electric field?
251. Hydrolysis
252. Electrophoresis
253. Protein synthesis
254. Protein denaturing
255. What is Drug Addiction?
256. Addiction to Food
257. Dependence on Drugs
258. Taking medicines with valid medical prescriptions
259. Not eating a balanced diet
260. Hashish and Ganja are obtained from
261. Heroin
262. Papaver somniferum
263. Cannabis
264. Ketamine
265. Diacetyl morphine is
266. Morphine
267. Heroin
268. Cocaine
269. Hashish
270. Depressants are
271. Drugs that cause drowsiness
272. Drugs that provide energy to the body
273. Drugs that reduces brain function
274. Drugs that cause mind confusion
275. Which alkaloid is found in the tobacco?
276. Cocaine
277. Caffeine
278. Morphine
279. Nicotine
280. Ketamine acts as a
281. CNS (Central Nervous System) stimulant
282. CNS (Central Nervous System) depressant
283. Hallucinogen
284. Analgesic
285. The following is not an analogue of morphine:
286. LSD
287. Heroin
288. Etorpine
289. Codeine
290. Scott test is used for the detection of
291. Morphine
292. Amphetamines
293. Marijuana
294. Cocaine
295. Toxicology is the study of
296. Prevalence of disease and death in a population
297. Adverse effects of chemicals on living organisms
298. The appearance of symptoms produced by infectious agents
299. None of the mentioned
300. Most poisons and toxins act by inhibiting the functions of
301. Enzymes
302. Hormones
303. Neurotransmitters
304. All the options