TNPSC
JSO

Previous Year Paper
(Forensic Science)
24 Aug, 2019

Question Booklet Code :

Register Number

2019

FORENSIC SCIENCE

Time Allowed : 3 Hours] **[Maximum Marks : 300**

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS

1. The applicant will be supplied with Question Booklet 15 minutes before commencement of the examination.
2. This Question Booklet contains **200** questions. Prior to attempting to answer, the candidates are requested to check whether all the questions are there in series and ensure there are no blank pages in the question booklet. **In case any defect in the Question Paper is noticed, it shall be reported to the Invigilator within first 10 minutes and get it replaced with a complete Question Booklet. If any defect is noticed in the Question Booklet after the commencement of examination, it will not be replaced.**
3. Answer **all** questions. **All** questions carry equal marks.
4. You must write your Register Number in the space provided on the top right side of this page. Do not write anything else on the Question Booklet.
5. An answer sheet will be supplied to you, separately by the Room Invigilator to mark the answers.
6. You will also encode your Question Booklet Code with Blue or Black ink Ball point pen in the space provided on the side 2 of the Answer Sheet. If you do not encode properly or fail to encode the above information, action will be taken as per Commission's notification.
7. Each question comprises *four* responses (A), (B), (C) and (D). You are to select ONLY ONE correct response and mark in your Answer Sheet. In case you feel that there are more than one correct response, mark the response which you consider the best. In any case, choose ONLY ONE response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.
8. In the Answer Sheet there are **four** circles Ⓐ, Ⓑ, Ⓒ and Ⓓ against each question. To answer the questions you are to mark with Blue or Black ink Ball point pen ONLY ONE circle of your choice for each question. Select one response for each question in the Question Booklet and mark in the Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. *e.g.* If for any item, Ⓑ is the correct answer, you have to mark as follows :

   Ⓐ ● Ⓒ Ⓓ

9. You should not remove or tear off any sheet from this Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the time of examination. After the examination is concluded, you must hand over your Answer Sheet to the Invigilator. You are allowed to take the Question Booklet with you only after the Examination is over.
10. **Do not make any marking in the question booklet except in the sheet before the last page of the question booklet, which can be used for rough work. This should be strictly adhered.**
11. Applicants have to write and shade the total number of answer fields left blank on the boxes provided at side 2 of OMR Answer Sheet. An extra time of 5 minutes will be given to specify the number of answer fields left blank.
12. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.

SEAL

SPACE FOR ROUGH WORK

1. The Science which is not an exact Science by any means

(A) Forensic Pathology
(B) Computer Science
(C) Behavioral Science
(D) Forensic Science

2. It is the application of Science and technology which plays a critical role in the investigation and adjudication of crimes in our criminal justice system.

(A) Molecular Science
(B) Behavioral Science
(C) Forensic Science
(D) Computer Science

3. Equally important role of the Forensic Scientist are

(A) interrogation
(B) counselling
(C) punishing
(D) to investigate, collect evidences, testing, reporting and depose evidence before the court of law

4. One of the oldest institution of Government Examiner of Questioned Document was established in India is

(A) Shimla
(B) Kolkatta
(C) Hyderabad
(D) Madras

5. Forensic examination reports are admissible as evidence in courts under Sec.

(A) 292 of Cr.P.C., 1973
(B) 293 of Cr.P.C., 1973
(C) 294 of Cr.P.C., 1973
(D) 291 of Cr.P.C., 1973

6. 'Truth Serum' refers to

(A) Narcoanalysis
(B) Polygraph
(C) Drug analysis
(D) Serological examination

7. Automobile paint of a specific colour is an example for the evidence possessing

(A) Class characteristics
(B) Pattern characteristics
(C) Individual characteristics
(D) Specific characteristics

8. Which one of the following is the best example of individualization?

(A) Blood group
(B) Fired bullets
(C) DNA
(D) Fabric from a mass

9. The popular restatement for Locard's Principle of Exchange may be summarized as

(A) Everyone leaves when contacted
(B) Everyone leaves when connected
(C) Everyone conduct leaves traces
(D) Every contact leaves a trace

10. When it is appropriate for the first responding officer to move a piece of evidence?

(A) when the evidence is a gun
(B) when he is charged with the responsibility of processing the scene for physical evidence
(C) only when the scene is secured
(D) if the crime is serious such as a homicide

11. Which one of the following statements is correct, while visiting the scene of crime?

(A) Fail to document any changes or contamination at the scene
(B) Remove items and package without documentation
(C) Note original conditions at the crime scene
(D) Photograph items without scales

12. The excellent containers for collection of arson evidence

(A) glass jars/metal paint cans
(B) plastic jars/plastic bags
(C) porous containers
(D) pharmacist's fold/envelope

13. Plastic bags are generally to be avoided when preserving biological evidences because they

(A) are banned now
(B) accelerate the stiffness
(C) will increase the temperature
(D) accelerate deterioration and mold growth

14. Which one of the following statement is incorrect to prove the chain of custody?

(A) Evidence must be held in a secured area
(B) Typically, evidence is placed in a container with a label or is tagged
(C) Storage of physical evidence has not any legal implications
(D) Evidence which was kept in an unsecured area may be inadmissible in court

15. 'Photographic Metrique' was the standardized technique adopted by

(A) Hans Gross
(B) Paul L. Kirk
(C) Jesse Brown Cook
(D) Alphonse Bertillon

16. The best method to pack the objects on which finger prints are found, by

(A) Wrapping in polythene covers
(B) Wrapping in cloth covers
(C) Wedging in a strong box
(D) Wedging in a thermocol box

17. Presentation of footwear/tyre impression evidences should be done by photography using

(A) Oblique light
(B) Visible light
(C) I.R. light
(D) U.V. light

18. Match the following :

(a)	Sunken footprints	(i)	Lifting
(b)	Shoe prints	(ii)	Casting
(c)	Surface prints	(iii)	Skid mark
(d)	Tyre impression	(iv)	Sole pattern

	(a)	(b)	(c)	(d)
(A)	(iii)	(iv)	(ii)	(i)
(B)	(iv)	(i)	(iii)	(ii)
(C)	(i)	(iii)	(iv)	(ii)
(D)	(ii)	(iv)	(i)	(iii)

19. Finger prints appear before the birth in the

(A) First and Second month of pregnancy
(B) Fifth and Sixth month of pregnancy
(C) Third and Fourth month of pregnancy
(D) Second and Third month of pregnancy

20. The identification using finger prints solely depends on

(A) Age
(B) Size
(C) Ridge pattern/characteristics
(D) Palm pattern

21. The documents which carry writings whose authorship is accepted are known as

(A) Disputed documents
(B) Spurious documents
(C) Accepted documents
(D) Admitted documents

22. The microscope which provides instant comparison of inks is

(A) Comparison microscope
(B) Polarized microscope
(C) Stereo microscope
(D) IR image conversion microscope

23. If there is high stress on the glass, the minute stress cracks observed under microscope at right angles to the ridges are called

(A) Radial cracks
(B) Concentric cracks
(C) Hackle cracks
(D) Heat cracks

24. The marks which can be used to determine from which direction the force came that caused the glass to break are

(A) Hackles
(B) Ribs
(C) Splinters
(D) Crater

25. The appearance of the bullet hole on a pane of glass can indicate

(A) the weight of the projectile
(B) the velocity of the projectile
(C) the type of the projectile
(D) the size of the projectile

26. The sequence of penetration on a glass pane can be positively opened in

(A) Sodalime silca glass
(B) Alumino-silicate glass
(C) Borosilicate glass
(D) Laminated wind shields

27. The glass examination, which can render a positive opinion of identity that the two or more pieces were once a portion of, and were broken from, the pane or object is

(A) The mechanical fit
(B) The Becke line method
(C) Dispersion staining
(D) Density gradient method

28. The advantages of using HPLC technique over GC is due to its ability to cope up with

(A) volatile compounds

(B) low molecular weight compounds

(C) non volatile and high molecular weight compounds

(D) non polymeric compounds

29. The mass spectrometry technique is most commonly encountered in

(A) Identification of explosive residues

(B) Identification of narcotic substances

(C) Identification of synthetic polymers

(D) Identification of drugs and its metabolites

30. The pumps, which are widely used and suitable for both analysis and column-packing in HPLC are

(A) Reciprocating-Piston pumps (B) Syringe pumps

(C) Gas pumps (D) Cycle pumps

31. Planar chromatography is nothing but

(A) Supercritical fluid chromatography

(B) Ion chromatography

(C) High-performance liquid chromatography

(D) Thin layer chromatography

32. The approximate percentage of organic matter present in the volume of soil is about

(A) 5 to 10%
(B) 70 to 75%
(C) 60 to 65%
(D) 35 to 40%

33. The technique which is non-destructive and shows much promise for forensic paint analysis is

(A) Neutron Activation Analysis
(B) Emission Spectrography
(C) Energy Dispersive X-ray Analysis with SEM
(D) Flame photometry

34. When collecting paint samples in a hit-and-run investigation involving two vehicles, the number of paint samples collected should be

(A) 2
(B) 3
(C) 4
(D) 6

35. The following microscopic technique is appropriate for the examination of layer structure as well as the comparison and identification of particles in a paint.

(A) Comparison microscope
(B) IR spectroscopy
(C) UV spectroscopy
(D) Polarized light microscopy

36. The chronic poisoning which occurs among persons employed in factories and industries in which lead and its salts are used is called

(A) TAMBA
(B) PARA
(C) PLUMBISM
(D) JASAT

37. Pyrodex is an example of

(A) low explosive
(B) high explosive
(C) military explosive
(D) booster

38. The explosive, which are rapidly gaining in popularity as substitute for dynamite are

(A) Boosters
(B) Slurries
(C) Blasting caps
(D) Plasticizers

39. The area or point within the scene that has the greatest concentration of damage in bomb scene investigation is referred to as

(A) epicenter
(B) site of explosion
(C) scene of explosion
(D) heart of explosion

40. Handwriting of each person is of having

(A) Classic characteristics
(B) Unique characteristics
(C) Multiple characteristics
(D) Non-characteristics

41. A writing of another person's signature in the forger's own style of writing is called

(A) Simple forgery
(B) Simulated forgery
(C) Traced forgery
(D) Disguised forgery

42. The more predominant common style of typewriting in Europe is

(A) Pica
(B) Elite
(C) Proportional spacing
(D) Metric

43. The light used to produce a traced forgery is

(A) Visible light
(B) Oblique light
(C) Transmitted light
(D) Polarized light

44. The human voice variations in the same person are called

(A) intra speaker variations
(B) inter speaker variations
(C) single speaker variations
(D) multi-speaker variations

45. 'Rate of Utterance' in human voice variations is not depend upon

(A) Mode of speech
(B) Mood of speech
(C) Intoxication
(D) Complexion

46. 'Intra speaker variability' of the human voice should be

(A) Maximal
(B) Minimal
(C) Equivocal
(D) Equal

47. In spectrographic Analysis, the sound energy is converted into electric energy, which operates the stylus and it creates a trace in the form of a graph on the paper on the drum is known as

(A) Echo print
(B) Voice print
(C) Lip print
(D) Vocal cord print

48. The first 'Polygraph' instrument was developed by

(A) Larson and keeler
(B) Lombrosso
(C) Aladin
(D) Henry Galton

49. Which one of the following is not related with the instrument 'Lie–Detector'

(A) Physiological changes
(B) Psychological changes
(C) Harmonic changes
(D) Narcotics changes

50. The best anti–dote for wood spirit poisoning is
(A) Ethyl alcohol
(B) Methyl alcohol
(C) Propyl alcohol
(D) Butyl alcohol

51. Evidence of gangrene of toes or fingers may be seen in the poisoning of
(A) Marking nuts
(B) Madar
(C) Capsicum
(D) Ergot

52. The preservation of following body fluid must be necessary in case of 'Arrow' Poison, for chemical examination
(A) Puscels
(B) Semen
(C) Urine
(D) Perspiration

53. The highly poisonous active principle in the seeds of yellow oleander
(A) Nerin
(B) Oleandrin
(C) Lobeline
(D) Thevetin

54. The very delicate test for the detection of metallic poisons is
(A) Marsh's Test
(B) Gutzeit Test
(C) Reinsch's Test
(D) Marquis Test

55. The average weight of 'ABRUS' seed is about, which are used by Indian goldsmiths for weighing silver and gold
(A) 105 mg
(B) 1000 g
(C) 10 kg
(D) 1005 g

56. B.'BOTULISM' is the term referred to
(A) Chemical Poisoning
(B) Metal Poisoning
(C) Snake Poisoning
(D) Food Poisoning

57. The Oxford English Dictionary lists one of the first uses of the phrase forensic science to be described as

(A) A legal science
(B) A crime science
(C) A mixed science
(D) A police science

58. The 'Chain of Custody' is nothing but maintaining the evidence from

(A) The documentation of evidence
(B) Collection of evidence
(C) Crime Scene to court
(D) Examination of evidence

59. The 'Forensic odontology' is otherwise called as

(A) Forensic entomology
(B) Forensic dentistry
(C) Forensic anthropology
(D) Forensic psychiatry

60. All marks of blood flowing in the wrong direction or against gravity suggest the possibility of

(A) The area of origin of a pattern
(B) Blood that travels through the air
(C) Distribution of blood stains
(D) The position of the body was moved

61. The test which is easily used for searching large areas for blood, particularly if the area has been cleaned up is

(A) Kastle–Mager test
(B) Benzidine test
(C) Luminol test
(D) Orthotolidine test

62. The best method to be adopted in the collection of blood stains

(A) Make it liquid and preservative must be added
(B) Placing of wet blood in a plastic cover
(C) As air dried cotton/ gauze swab which can be placed into a brown envelope
(D) Dry the wet stain under sunlight and place into airtight container.

63. Blood stains over twenty years old were also reported positive with the following test

(A) Takayama test
(B) Teichmann test
(C) Wagenaar test
(D) Fulthorpe test

64. The colour of red hair primarily depends on the pigment

(A) Melanin
(B) Phaeomelanin
(C) Cortical fusi
(D) Tyrosinase

65. The double helix structure of DNA was presented by

(A) Franklin and Wilkins
(B) Watson and Crick
(C) Kirk and Curtis
(D) Darwin and Mendel

66. Forensic analysis of mtDNA has been used to link many of the kidnapped children to their surviving

(A) Biological mother
(B) Biological father
(C) Biological Uncle
(D) Biological relatives

67. The genome which contains sequences of tandem repeats consisting of units having variable length usually repeated less than 100 times at a particular site are called

(A) DNA genome
(B) Alphoid satellites
(C) STRs
(D) Mini satellites

68. Which of the following specialized personnel would be the most appropriate when attempting to identify skeletal remains?

(A) Forensic archaeologist
(B) Criminalist
(C) Forensic Anthropologist
(D) Coroner

69. DNA profile fails to distinguish between

(A) Identical twins
(B) Non–identical twins
(C) Father and Son
(D) Mother and daughter

70. The Ideal proportions of fuel . oxygen and final products are called
(A) Combustion
(B) Volatization
(C) Energy of molecular motion
(D) Stoichiometry

71. The most commonly sought physical evidence in argon investigation is
(A) The presence of Refrigerator
(B) The presence of gas stove
(C) The presence of Rodants
(D) The presence of ignitable fluids

72. The term 'Spontaneous chemical causation' most commonly encountered in
(A) Partially cured hay
(B) Wet hay
(C) well cured hay
(D) Wet charcoal

73. The lowest temperature at which a liquid produces a vapor that can sustain a continuous flame is called
(A) Flash point
(B) Fire point
(C) Ignition temperature
(D) Spontaneous ignition temperature

74. A flammable liquid, usually one of a low flash point such as gasoline, in a breakable container with an ignition system is
(A) Improvised mixture
(B) Molotov cocktail
(C) Incendiary mixture
(D) Fire cocktail

75. Most frequent pattern of finger prints are
(A) Arch
(B) Loop
(C) Whorls
(D) Composite

76. In the casting of tool marks, very satisfactory results can be obtained by using
(A) Plasticine
(B) Dental mass
(C) Woods metal
(D) Plaster of Paris

77. These type of ballistics are of interest to the forensic pathologist.
(A) Exterior ballistics
(B) Interior ballistics
(C) Terminal ballistics
(D) Transition ballistics

78. Caliber is now more commonly used to
(A) Indicate the bore diameter
(B) Indicate the number of grooves
(C) Indicate the number of lands
(D) designate a cartridge

79. The percentage of pellets in a pellet pattern fired at a range of 40 yards that fall within a 30 inch inside the circle, in an improved cylinder barrel is
(A) 65 to 75 %
(B) 45 to 65 %
(C) 25 to 35 %
(D) 35 to 45 %

80. While conducting bullet examination, the bullet should be marked on
(A) the base
(B) the rifling impression
(C) the point
(D) the areas of ricochet

81. Lead – alloy bullets are more effective than pure lead bullets because of
(A) its softness
(B) its range
(C) to increase the leading of rifled barrels
(D) Its hardness and reduce the lead fouling effect

82. Which of the following marks found on cartridge cases can be used to identify the make of the fire arm?
(A) Lands
(B) Grooves
(C) Extractor
(D) Striations

83. The wad used in a shotgun cartridge to seal the barrel to prevent escape of gases and to ensure proper pressure development is

(A) Cushion wad
(B) Over shot wad
(C) Over powder wad
(D) Under shot wad

84. The manufacturer of the weapon may be determined from the following mark on the fire arm

(A) Etching marks
(B) Firing pin marks
(C) Ejector marks
(D) Proof marks

85. The non–flaming fire in a pile of saw dust is a good illustration of

(A) Flaming fire
(B) Diffusion flames
(C) Smoldering fire
(D) Laminar flames

86. The finger print of petroleum products can be detected using the technique

(A) AAS
(B) Electrophoresis
(C) GC–MS
(D) TLC

87. Troniometer is one of the device used in the following instrument

(A) Atomic absorption spectrometer (B) Emission spectrograph

(C) X–ray diffractometer (D) Mass spectrometer

88. In the forensic examination of paints, the pigment titanium dioxide in different forms can be easily distinguished by the technique

(A) Electron microprobe analysis (B) Energy Dispersive X–ray analysis

(C) X–ray Diffraction (D) Emission spectrography

89. The impingement of light of a specific wavelength onto previously generated ground – state atoms has been involved in the technique

(A) Emission spectrography (B) Atomic absorption spectrometry

(C) Neutron activation analysis (D) X-Ray Diffraction

90. The most widely used and accepted radiation source in AAS is

(A) Electrodeless discharge lamp

(B) Radio frequency electrodeless discharge lamp

(C) Low–pressure discharge lamp

(D) Hollow cathode lamp

91. "Soap chromatography" is the technique which has been extensively used in

(A) HPLC
(B) GC
(C) TLC
(D) GC–MS

92. In MS, Ionization by electron impact can only be accomplished when the sample molecule exist in a

(A) inert state
(B) gaseous state
(C) liquid state
(D) solid state

93. Accelerants recovered from fire debris can be characterized through pattern recognition by GC with

(A) Electron capture detector
(B) Flame photometric detector
(C) Electrolytic conductivity detector
(D) Flame ionization detector

94. 'Pleochrosim' is determined by examining the fiber on a

(A) Comparison microscope
(B) Stereoscope microscope
(C) Polarized light microscope
(D) binocular microscope

95. Forensic Science is, introduced for the first time in India during British era as Chemical Examiner's laboratory.

(A) 1849 (B) 1839

(C) 1853 (D) 1881

96. The Forensic Sciences form a unique partnership with

(A) law enforcement (B) law

(C) medicine (D) all the above

97. The samples of drunken driving cases are analyzed in

(A) Toxicology unit (B) Narcotic unit

(C) Biology unit (D) Psychiatry unit

98. The Forensic practitioner's sole obligation is to serve the aims of

(A) Their agency (B) Justice

(C) The legal system (D) The Prosecutor

99. Which organization has a professional code of ethics that is applicable to forensic science laboratory managers?

(A) United Nation, Organisation

(B) Human Rights Commission

(C) World Health Organisation

(D) American Society of Crime Laboratory Directors

100. Criminalistics is word imported into English from

(A) China (B) Japan

(C) Germany (D) London

101. The law enacted by the Government of India to deal with the cyber crimes is

(A) Indian Penal Code
(B) Indian Evidence Act
(C) Information Technology Act 2000
(D) Criminal Procedure Code

102. The adopt in the field of 'Ballistics'

(A) Mathiew Orifila
(B) Alphone Bertillow
(C) Calvin Goddard
(D) Hans Gross

103. Something legally submitted to a competent trier of fact as a means of ascertaining the truth of any alleged matter under investigation is called as

(A) object
(B) material
(C) matter
(D) evidence

104. Which one of the following statements is incorrect?

(A) Physical evidence cannot exonerate the innocent
(B) Physical evidence can establish the identity of persons associated with the crime
(C) Physical evidence may be more reliable than eye witnesses to crimes
(D) Physical evidence can corroborate the victim's testimony

105. The type of evidence with three dimensional existence is called

(A) testimonial evidence
(B) definite evidence
(C) physical evidence
(D) indefinite evidence

106. Any subsequent information derived from illegally seized physical evidence is inadmissible in court, which has been provided in a legal doctrine called

(A) Corpus delicti
(B) Modus operandi
(C) Fruit of the poison tree
(D) Mens ria

107. The following characteristics of a tool mark may not make a definite identification of the tool possible.

(A) General form and size
(B) Injuries
(C) Irregularities
(D) Peculiarities

108. Which one of the following is not a tool mark?

(A) Casting, extruding and grinding marks
(B) Indentation marks
(C) Striation marks
(D) Boring marks

109. These two things will ensure the ability to produce good quality enlargements or 1 : 1 photographs of evidence.

(A) A ruler and parallel film plane
(B) A parallel film plane and macrolens
(C) A ruler and macrolens
(D) A ruler and a compass

110. For crime scene photography, a digital camera which yields excellent results should be with a resolution in the range

(A) 16 megapixel
(B) 14 megapixel
(C) 11 megapixel
(D) 8 megapixel

111. To locate gunpowder residue on a coloured fabril, the fabric is photographed with

(A) X-rays
(B) Visible light
(C) UV-rays
(D) IR-rays

112. Casting of foot wear impressions is preferably done with

(A) Dental Stone
(B) Silicone rubber
(C) Paraffin
(D) Plaster of Paris

113. A foot impression in wet earth, when it dries, can become appreciably

(A) Same size
(B) Smaller
(C) Longer
(D) Could not be determined

114. The dust foot prints formed when the suspect walked on the tiles are best recorded by

(A) Lifting by casting with plaster of paris
(B) Lifting by wet paper
(C) Lifting by coating with varnish
(D) Lifting by static electricity

115. Choose the incorrect statement from the following

(A) Gait pattern studies are almost perfect in most of the situations
(B) Gait pattern are unique for each individual
(C) Gait pattern are the walking picture of an individual
(D) Gait pattern depends upon the height, weight, body structure, deformities, peculiarities

116. The most important individual characteristic in a footwear is

(A) Craftmanship
(B) Wear and Tear
(C) Sole pattern
(D) Size number

117. The field of forensic podiatry deals with

(A) Foot impressions
(B) Finger prints
(C) Tyre impressions
(D) Lip prints

118. The footwear impression in a soft material is normally described as a

(A) two dimensional
(B) multi dimensional
(C) mono dimensional
(D) three dimensional

119. The friction ridges when pressed on pliable surfaces like butter leave marks, that are called

(A) latent prints
(B) dust prints
(C) plastic prints
(D) ridge tracing

120. Modern ballpoint inks are referred to as

(A) oil based inks
(B) glycol based inks
(C) resin based inks
(D) carbon based inks

121. 'Embellishments' in handwritings are

(A) Natural variations
(B) Personal peculiarities
(C) Fundamental variations
(D) Artificial variations

122. The documents which are created for evaluation of the disputed documents are called as

(A) known documents
(B) non-standard specimens
(C) non-request exemplars
(D) request exemplars

123. The physical characteristic of paper which provide sufficient information to identify the manufacturer of a paper is

(A) size
(B) weight
(C) watermark
(D) colour

124. The most useful laboratory technique for comparison of writing inks is

(A) GLC
(B) HPLC
(C) TLC
(D) GCMS

125. The admissibility of testimony based on questioned document examination in the courts gradually became reality only after the pioneering effects of

(A) Dreyfus
(B) Albert S. Osborn
(C) F & E Herman
(D) Dr. Antonio A. Cantu

126. The VOD range of ANFO is

(A) 0 – 3300 ft/s
(B) 3300 – 6000 ft/s
(C) 8000 – 15,600 ft/s
(D) 6600 – 12,400 ft/s

127. 'Placement of diacritics' is one of the characteristics of

(A) Type writings
(B) Erasures
(C) Obliterations
(D) Handwritings

128. Examination of the channeling effect on the paper caused by pen pressure is the process involved in the detection of

(A) Alteration by addition
(B) Alteration by deletion
(C) Deciphering of indented writings
(D) Deciphering of charred documents

129. The techniques which are dynamic processes wherein a mobile phase transports the sample mixture across or through a stationary-phase medium

(A) Spectrophotometry
(B) Mass spectrometry
(C) X-ray diffraction
(D) Chromatography

130. The best separation technique for its compatibility with the any state of the sample as well as the sensitivity required for very minute micro quantity of samples is

(A) Gas chromatography
(B) Thin layer chromatography
(C) Capillary electrophoresis
(D) Liquid chromatography

131. Which one of the following gas, the most commonly used as mobile phase in GRS Chromatography is

(A) Phosphine
(B) Helium
(C) Methane
(D) Oxygen

132. A mathematical operation, which converts the interferogram to the final IR spectrum, which is the familiar frequency domain spectrum showing intensity versus frequency, is being followed in

(A) dispersive IR spectrometer
(B) FTIR spectrometer
(C) UV spectrophotometer
(D) UV-vis spectrophotometer

133. The infrared spectrum of a polyatomic molecule consists primarily of the fundamentals of

(A) infrared active normal modes
(B) infrared inactive normal modes
(C) infrared normal modes
(D) non-vibrational normal modes

134. Alcohol is more efficiently absorbed directly through

(A) Blood
(B) Urine
(C) Stomach
(D) Small intestine

135. 90% of alcohol is eliminated from the body by the mechanism

(A) Metabolism
(B) Sweating
(C) Digestion
(D) Vomiting

136. The stools are resembling the "rice water stools of cholera" in the poisoning of

(A) Arsenic
(B) Bismuth
(C) Copper
(D) Antimony

137. "Munroe effect" is caused by an explosive charge

(A) linear charge
(B) conical charge
(C) platter charge
(D) claymore charge

138. Which one of the following military explosive which requires a more powerful detonator than is usually available in the commercial market to achieve ideal velocity due to its insensitive nature

(A) M1
(B) PETN
(C) TNT
(D) C-4

139. 'Booby traps' are otherwise called as

(A) Active devices
(B) Passive devices
(C) Positive safety
(D) Negative safety

140. Which of the following items can be used to ignite heat-sensitive explosives such as black powder?

(A) RDX
(B) TNT
(C) C-3
(D) Flashbulbs

141. The most widely used of detector in the gas chromatograph while conducting examination of explosive residues is

(A) VTA
(B) ECD
(C) EI
(D) FID

142. The percentage of RDX in the 'military dynamite' is

(A) 77%
(B) 91%
(C) 75%
(D) 94%

143. The abrasion type erasures, which are visible under

(A) Colour test
(B) IR light
(C) Microscopic test
(D) X-ray

144. Any indentations or depressions present in the paper will be amplified and made visible using

(A) UV lighting
(B) IR lighting
(C) Side lighting
(D) Fluorescence lighting

145. The technique which is very successful in detecting indented impressions in documents, when all other techniques failed, is

(A) TLC
(B) IR image conversion
(C) HPLC
(D) ESDA

146. The minimum number of specimen signatures required for the comparison of one disputed signature

(A) 10
(B) 50
(C) 200
(D) 150

147. The first use of soil evidence was developed by

(A) Sir Edmund Locard
(B) Conan Doyle
(C) Methren
(D) Dr. George Popp

148. Fractionating soil samples by the pipette method is based on the principle of

(A) Franklin's law
(B) Stoke's law
(C) J.I. Thornton's law
(D) Graves' law

149. The cardiovascular changes of the deceptor are measured by

(A) pneumograph (B) Plethysmograph

(C) Sphymograph (D) Spectrograph

150. The theory involved in the Lie Detector is

(A) Hypnosis (B) Brain Mapping

(C) Psycho-Physiological Detection (D) Truth serum

151. 'Finapres' are used in polygraph examinations for measuring

(A) Blood pressure changes (B) Respiratory changes

(C) Somatic changes (D) Neurological changes

152. Opiate alkaloids are derived from the seeds of

(A) Lophophora cactus (B) Psilocybe mexicana

(C) Cannabis Sativa (D) Papaver Somniferum

153. Heroin from Mexico is usually in

(A) White (B) Brown

(C) Half-White (D) Faded-White

154. The mode of intake 'mainliners' is refers to

(A) Oral intake (B) inhalation mode

(C) smoking mode (D) injection mode

155. The gas which is absorbed through lungs and readily combines with the haemoglobin of red corpuscles to form is stable compound 'Carboxyhaemoglobin' is

(A) Carbondioxide
(B) Carbon monoxide
(C) Carbondisulphide
(D) Carbolic acid

156. The category of poisons which inhibits its action on acetyl choline are

(A) Organophosphorus compounds
(B) Yellow phosphorus compounds
(C) Carbolic acid
(D) Phosphoratted Hydrogen

157. The Majority of states in the united states set a blood alcohol level at which a person is presumed to be under the influence of alcohol in "drunk driving" cases

(A) 0.0015%
(B) 0.0003%
(C) 0.08%
(D) 0.0025%

158. The alcoholic beverages are legally produced by the process of

(A) Distillation
(B) Fractional Distillation
(C) Fermentation
(D) Fragmentation

159. The pointed or tail end of a blood stain is used to indicate

(A) The number of impacts during an incident
(B) The story of what took place at a crime scene
(C) The sequence of events
(D) The direction of travel and the angle of impact

160. During a homicide investigation, a preliminary inspection of which of the following is not valuable before conducting a crime scene search.

(A) The body to suggest the mode of death
(B) The CCTV footage of a nearby traffic signal
(C) The Weapon
(D) The entry and exit paths

161. The word "Forensic" is derived from the Latin Word

(A) Public
(B) Court
(C) Criminalistics
(D) Forum

162. The test which can often give positive results with blood removed from wood and leather surfaces is

(A) Takayama Test
(B) Hematin Test
(C) Acetone Chlor–Hemin Test
(D) Higaki and philp Test

163. Anti–H lectin, which reacts strongly with the H substance present in O blood, can be prepared by extracting the specific seeds of

(A) Ulex europaeus
(B) Dolichos biflorus
(C) Ficus bengalensis
(D) Nerium Odorum

164. Persons of blood type AB have

(A) Anti–A agglutinin
(B) Anti–B agglutinin
(C) Neither anti–A nor anti–B agglutinin
(D) Both anti–A and anti–B agglutinins

165. The enzyme, which is found in large quantities in semen is

(A) Peroxidase
(B) Amylase
(C) Acid phosphatase
(D) Glynase

166. The protein which is specific to semen, has not been found in any other body fluids or organs is

(A) Acid phosphatase
(B) Peptidase
(C) Amylase
(D) P30

167. The medullary index in animals is more than

(A) 0.25
(B) 0.5
(C) 0.2
(D) 0.1

168. 'Hemp' is an example of

(A) Natural fibre
(B) Synthetic fibre
(C) Animal fibre
(D) Man made fibre

169. Which one of the following are useless for DNA profiling?
(A) Highly putrefied bodies
(B) Erythrocytes
(C) Molar tooth
(D) Hair samples

170. The human origin of blood is established from
(A) Catalytic test
(B) Crystal test
(C) Spectrophotometric test
(D) Precipitin test

171. The qualitative detection of seminal fluid choline is basis for the
(A) Barberio test
(B) Florence test
(C) Acid phosphatase test
(D) Elisa technique

172. Blood contains water about
(A) 80%
(B) 60%
(C) 95%
(D) 75%

173. The Grouping of Blood stains ABO system was first demonstrated by
(A) Lattes
(B) Sensabaugh
(C) Karl Landsteiner
(D) Siracuca

174. The highly satisfactory method for ABO grouping in dried blood stains is
(A) Thread method
(B) Mixed agglutination method
(C) Absorption – Elution method
(D) Absorption–Inhibition method

175. The first person to describe the classification of finger prints was
(A) Dr. Jan purkyne
(B) Dr. Henry Faulds
(C) William Herschel
(D) Galton

176. Finger prints from excessively putrified bodies are obtained through
(A) X–rays
(B) Ninhydrin
(C) Lasers
(D) Cyanide fuming

177. The carpet from the car involved in hit and run case is the best example for evidence of
(A) Individual source
(B) Common source
(C) Special source
(D) Patterned source

178. Larent finger prints should be developed by the
(A) the investigator himself
(B) scientific expert
(C) Police photographer
(D) Finger print expert

179. The technique used for the development of finger prints on raw wood
(A) Iodine
(B) Ninhydrin
(C) Cyanide fuming
(D) Fluorescence examination

180. Small and sometimes microscopically unique markings of a tool proved to be
(A) Neglected
(B) Very valuable
(C) Just corrabrrative
(D) useless

181. Firing pin of fire arms may leave the following tool mark on the cartridge.
(A) Scrape marks
(B) Saw marks
(C) Striation marks
(D) Indentation marks

182. Positive identification of a tool is only possible with
(A) the casting of tool marks
(B) the photograph of the tool mark
(C) microscopic comparison of the mark with one made directly by the tool
(D) the size of the tool mark

183. In a contact shot to a victim, there is often, blood found within the barrel of the handgun. This is called

(A) Back spatter
(B) Forward spatter
(C) Drop pattern
(D) Splash pattern

184. The range of firing can be positively determined with

(A) Barrel washing
(B) Sodium rhodizonate test
(C) Size of the firing pin
(D) Powder pattern deposit

185. Test on the shooter's hands can be made positively

(A) to identify the shooter
(B) to identify the weapon
(C) to identify the range of firing
(D) to identify the angle of shoot

186. The marks caused by a revolver bullet striking the edge of the forcing cone are

(A) Skid marks
(B) Shaving marks
(C) Sliding marks
(D) Cannelures

187. The particles of metal deposited around the bullet hole/wound are referred to as

(A) Tattooing
(B) Smudging
(C) Fouling
(D) Stippling

188. A gun shot wound resulting from a distant shot will provide basis for an estimation of the range of fire

(A) Certainly
(B) to certain extent
(C) no way
(D) probably

189. The shiny blisters of char is known as

(A) Alligatoring
(B) Checkering
(C) Baking
(D) Flashovering

190. The chipping or crumbling of a concrete, plaster or masonry surface is called

(A) deflagrating
(B) floor–wax–stripping
(C) localized burning
(D) spalling

191. 'Ghost marks' are nothing but

(A) Sign of flammable liquid on floors covered with vinyl or asphalt tiles
(B) Fire nearest ventilation source
(C) Calcination of Gypsum board
(D) Heat on the steel wire spring

192. The individualizing feature of spectrum of this technique, has been compared with that of a finger prints is

(A) Atomic absorption spectra
(B) Atomic emission spectra
(C) IR spectrum
(D) Neutron Activation Analysis

193. The technique which can be used to obtain "a finger print" of the fiber based on its chemical composition is

(A) GC
(B) Pyrolysis gas chromatography
(C) GC – MS
(D) HPLC

194. This is a detector of choice for analysis of organochlorinated pesticides in GC

(A) Thermal conductivity detector
(B) Flame Ionization detector
(C) Electron capture detector
(D) Flame photometric detector

195. It is a micro analytical technique which requires some energetic process for coverting a significant number of molecules of the analyte to a charged species so that the mass–to–charge ratio of the charged form of the analyte may be determined

(A) Chemical ionization
(B) Electron ionization
(C) Mass spectrometry
(D) Negative ion mass spectrometry

196. The determination of the age of a set of fingerprint is almost preservation is possible if the impressed article stays structurally intact.

(A) possible
(B) impossible
(C) to possible a certain extent
(D) possible in case of twins

197. The normal IR source is turned off as the sample acts as the radiation source is happening in the technique

(A) IR microspectroscopy
(B) Fourier transform IR spectroscopy
(C) Emission spectroscopy
(D) Raman spectroscopy

198. The most fruitful method for the elemental analysis of bullet lead is

(A) Internal silencing method
(B) External silencing method
(C) Multi element quantitative analysis
(D) Neutron activation analysis

199. Identification and quantitation of volatile and semivolatile organic compounds in complex mixtures are possibly determined by

(A) Gas chromatography
(B) Thin layer chromatography
(C) Gas chromatography with mass spectrometry
(D) IR spectrometry

200. Which one of the following instrumental method is not suitable for elemental analysis of glass samples?

(A) NAA
(B) AAS
(C) MS
(D) TLC

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