

MSC FORENSIC SCIENCE
FINAL

1. The lowest energy of a quantum mechanical harmonic oscillator is $\frac{h\nu}{2}$. It is referred to as
 - (A) Ground state energy
 - (B) Zero point energy
 - (C) Vibrational energy
 - (D) All of the above

2. The value of 1 Angstrom in μm is
 - (A) 10^{-4}
 - (B) 10^{-6}
 - (C) 10^{-9}
 - (D) 10^{-3}

3. Which of the following substances has the highest value of the Young's modulus?
 - (A) Steel
 - (B) Wood
 - (C) Rubber
 - (D) Plastic

4. What principle law explains the working of hydraulic brakes in automobile?
 - (A) Bernoulli's law
 - (B) Poiseuille's principle
 - (C) Pascal's law
 - (D) Archimedes principle

5. A cut diamond sparkles because of
 - (A) emission of light by the diamond
 - (B) its total internal reflection
 - (C) absorption of light by the diamond
 - (D) its hardness

6. Atomic mass number of an element is 232 and its atomic number is 90. The end product of this radioactive element is an isotope of lead (atomic mass 208 and atomic number 82). The number of α - and β - particles emitted are

- (A) $\alpha = 6$ and $\beta = 0$
- (B) $\alpha = 6$ and $\beta = 4$
- (C) $\alpha = 4$ and $\beta = 6$
- (D) $\alpha = 3$ and $\beta = 3$

7. The barrier potential of silicon diode at room temperature is

- (A) 0.3 volt
- (B) 0.7 volt
- (C) 1 volt
- (D) 2 volt

8. The basic logic gate whose output is the complement of the input is

- (A) AND
- (B) OR
- (C) NOT
- (D) XOR

9. When charge particle moves in a transverse electric field it traces a

- (A) circular path
- (B) parabolic path
- (C) straight path
- (D) irregular path

10. Magnetic susceptibility is given by..... [where, M is Magnetization, B Magnetic induction and H is magnetic field strength]

- (A) $\frac{M}{B}$
- (B) $\frac{M}{H}$
- (C) $\frac{H}{M}$
- (D) $\frac{B}{H}$

11. The danger signals are generally red as red light

- (A) is least bright
- (B) undergoes least scattering
- (C) has lowest velocity
- (D) gives comfort to eyes

12. The ability of optical instrument to differentiate two closely placed objects is called as
- (A) Resolving power
 - (B) Magnifying power
 - (C) Collimating power
 - (D) Illuminating power
13. The de-Broglie wavelength of material particles of mass 'm' moving with velocity 'u' which are in thermal equilibrium at temperature T is
- (A) $\frac{h}{\sqrt{2mKT}}$
 - (B) $\frac{h}{\sqrt{3mKT}}$
 - (C) $\frac{h}{\sqrt{muT}}$
 - (D) $\frac{h}{\sqrt{2KT}}$
14. A frame of reference has four coordinates, x, y, z, and t is referred to as the
- (A) Inertial frame of reference
 - (B) Non-inertial frame of reference
 - (C) Space-time reference frame
 - (D) Four-dimensional plane
15. Scattered light has the same frequency as that of incident beam. This phenomenon is known as
- (A) Rayleigh scattering
 - (B) Elastic scattering
 - (C) Raman scattering
 - (D) Rayleigh scattering and Elastic scattering
16. NaCl has fcc lattice with $a = 5.63 \text{ \AA}$, the spacing of (100) planes is
- (A) $2.82 \text{ \AA}$
 - (B) $5.64 \text{ \AA}$
 - (C) $1.41 \text{ \AA}$
 - (D) $4.23 \text{ \AA}$

17. An electron microscope gives better resolution than optical microscope because
- (A) it uses more powerful lenses
 - (B) the velocity of electrons is smaller than that of light
 - (C) the electrons have more energy than light photons
 - (D) the wavelength of electrons is smaller than the wavelength of visible light
18. Which of the following thermodynamic law gives concept of enthalpy?
- (A) 1st law of thermodynamics
 - (B) 2nd law of thermodynamics
 - (C) Zeroth law of thermodynamics
 - (D) 3rd law of thermodynamics
19. In an isochoric process, we have
- (A) $W = 0$
 - (B) $Q = 0$
 - (C) $\Delta U = 0$
 - (D) $\Delta T = 0$
20. Which of the following are false for electromagnetic waves?
- (A) Transverse
 - (B) Mechanical Wave
 - (C) Longitudinal
 - (D) Produced by accelerating charges
21. Dazzling colours exhibited by thin films of oil spread on the surface of water are due to
- (A) Reflection
 - (B) Interference
 - (C) Polarization
 - (D) Diffraction
22. Light transmitted by Nicol Prism is
- (A) Partially Polarized
 - (B) Unpolarized
 - (C) Plane Polarized
 - (D) Elliptically Polarized

23. Coherent monochromatic light beams of Intensities I and $4I$ are superposed. The maximum and minimum possible intensities in the resulting beam are
- (A) $5I$ and I
 - (B) $5I$ and $3I$
 - (C) $9I$ and I
 - (D) $9I$ and $3I$
24. Iso-neutronic pair is
- (A) ${}_6\text{C}^{14}$ and ${}_6\text{C}^{12}$
 - (B) ${}_6\text{C}^{14}$ and ${}_7\text{N}^{14}$
 - (C) ${}_7\text{N}^{13}$ and ${}_6\text{C}^{12}$
 - (D) ${}_7\text{N}^{13}$ and ${}_6\text{C}^{14}$
25. If Voltage applied on a capacitor is increased from V to $2V$, choose the correct conclusion
- (A) Q remains the same, C is doubled
 - (B) Q is doubled; C doubled
 - (C) C remains same, Q doubled
 - (D) Both Q and C remain same
26. The oldest and earliest form of propellant used in fire arms is
- (A) Black Powder
 - (B) Nitrocellulose
 - (C) Nitro Glycerine
 - (D) Graphite Powder
27. The process of reading or interpreting the effaced or illegible writing is
- (A) Restoration
 - (B) Obliteration
 - (C) Decipherment
 - (D) Splicing
28. Which of the following is the least reliable source of evidence?
- (A) DNA
 - (B) Fingerprints
 - (C) Eye Witness
 - (D) Blood

29. If the acceleration due to gravity becomes 4 times its original value, then escape velocity becomes
- (A) one fourth of the original value
 - (B) 2 times of original value
 - (C) halved
 - (D) 4 times of original value
30. Which of the following is NOT a scalar quantity?
- (A) Viscosity
 - (B) Pressure
 - (C) Stress
 - (D) Surface Tension
31. Which of the following digital evidence type is generally considered non-volatile?
- (A) Main Memory
 - (B) Log Files
 - (C) Routing Tables
 - (D) DNA Cache
32. Which of the following is an example of system software?
- (A) Microsoft Word
 - (B) Google Chrome
 - (C) Windows 10
 - (D) Photoshop
33. Which of the following represents the smallest unit of data in a computer?
- (A) Byte
 - (B) Bit
 - (C) Nibble
 - (D) Word
34. Which type of storage retains data even when the power is turned off?
- (A) RAM
 - (B) Cache
 - (C) ROM
 - (D) Registers
35. The HTTP stand for.....

- (A) Hyperlink Transfer Protocol
- (B) Hypertext Transmission Process
- (C) Hypertext Transfer Protocol
- (D) High Transmission Text Processing

36. Which of the following is NOT an application of Artificial Intelligence?

- (A) Face Recognition
- (B) Machine Learning
- (C) BIOS Configuration
- (D) Speech Recognition

37. What is the function of an assembler?

- (A) Convert assembly language to machine code
- (B) Convert high-level code to machine code
- (C) Convert machine code to assembly language
- (D) Manage CPU operations

38. Which of the following is a volatile memory?

- (A) SSD
- (B) RAM
- (C) ROM
- (D) Hard Drive

39. Which language is primarily used for data science?

- (A) C++
- (B) Python
- (C) Assembly
- (D) HTML

40. Which of the following file formats is used for storing images?

- (A) .jpg
- (B) .exe
- (C) .doc
- (D) .csv

41. Which protocol is used to send emails?

- (A) HTTP
- (B) SMTP
- (C) FTP
- (D) POP3

42. The language used for developing Android applications is
- (A) Java
 - (B) COBOL
 - (C) Pascal
 - (D) BASIC
43. What does IoT stands for?
- (A) Internet of Technology
 - (B) Internal Object Tracking
 - (C) Internet of Things
 - (D) Integrated Online Transfer
44. What is the default port number of HTTP?
- (A) 21
 - (B) 80
 - (C) 443
 - (D) 25
45. Which language is used for styling web pages?
- (A) HTML
 - (B) JavaScript
 - (C) CSS
 - (D) PHP
46. Software that automatically delivers advertisements is
- (A) Adware
 - (B) Worm
 - (C) Ransomware
 - (D) Virus
47. Malware that holds a computer system captive until a payment is made to the attacker
- (A) Virus
 - (B) Ransomware
 - (C) Worms
 - (D) Spyware

48. Malicious code that attaches to legitimate programs and usually spreads by USB drives, optical media, network shares, or email-
- (A) Adware
 - (B) Virus
 - (C) Spyware
 - (D) All of the above
49. What type of cyber attack tricks users into providing sensitive information by pretending to be a trustworthy entity?
- (A) Phishing
 - (B) Ransomware
 - (C) Denial of Service (DoS)
 - (D) SQL Injection
50. Which security principle ensures that data is not altered during transmission?
- (A) Confidentiality
 - (B) Integrity
 - (C) Availability
 - (D) Authentication
51. What is the purpose of a firewall in cyber security?
- (A) To block malware installation
 - (B) To prevent unauthorized access to a network
 - (C) To increase internet speed
 - (D) To store passwords securely
52. Which of the following is an example of two-factor authentication (2FA)?
- (A) Entering a username and password
 - (B) Using a CAPTCHA
 - (C) Entering a password and a one-time code sent to a phone
 - (D) Changing a password every three month
53. What does VPN stands for?
- (A) Virtual Personal Network
 - (B) Virtual Private Network
 - (C) Variable Protection Network
 - (D) Verified Protocol Network

54. Which cyber attack involves overwhelming a server with excessive requests to disrupt services?
- (A) Phishing
 - (B) Denial of Service (DoS) attack
 - (C) Man-in-the-Middle attack
 - (D) Keylogging
55. What is the primary function of Public Key Infrastructure (PKI)?
- (A) Managing encryption keys and digital certificates
 - (B) Preventing DoS attacks
 - (C) Enhancing computer processing speed
 - (D) Detecting phishing emails
56. Which of the following is NOT a form of a memory?
- (A) Instruction cache
 - (B) Instruction register
 - (C) Instruction opcode
 - (D) Instruction cache and Instruction register
57. Correct HTML tag for the largest heading is
- (A) <head>
 - (B) <h6 >
 - (C) <heading>
 - (D) <h1>
58. The IP address 127.0.0.1 is known as
- (A) Default Gateway
 - (B) Broadcast Address
 - (C) Loopback Address
 - (D) Network Address
59. Which of the following is NOT a function of an operating system?
- (A) Memory management
 - (B) File management
 - (C) Arithmetic computation
 - (D) Process scheduling

60. Which of the following is an example of an embedded system?
- (A) Smart watch
 - (B) Laptop
 - (C) Desktop computer
 - (D) Mainframe
61. Which of the following is a confirmatory test of blood?
- (A) Kastle – Mayer test
 - (B) Leucomalachite Green test
 - (C) Alder test
 - (D) Teichmann test
62. Another name of Heroine is
- (A) Diacetylmorphine
 - (B) Marijuana
 - (C) Meow drug
 - (D) Speedball
63. Which statement is true for LD₅₀?
- (A) Dose that kills 50 people only
 - (B) Dose that doesn't kill 50 people
 - (C) Dose that shows its effect on 50 people
 - (D) A dose that has the ability or power to kill 50% of the testing population
64. Hesitation cuts can be seen in which of the following injury?
- (A) Suicide
 - (B) Homicide
 - (C) Gunshot
 - (D) Accident
65. Which of the following instrument is used in the Questioned Documents?
- (A) GC-MS/MS
 - (B) ESDA
 - (C) NAA
 - (D) ATR-FTIR

66. The outer hard layer of the pollen grain comprises of
- (A) Sporopollenin
 - (B) Chitin
 - (C) Pectin
 - (D) Silica
67. Polygraph test is used for the detection of
- (A) Psychosomatic changes in the body
 - (B) Pharmacological changes in the body
 - (C) Dental change of body
 - (D) Radiological change of the body
68. Components of black powder include
- (A) Charcoal
 - (B) Sulfur
 - (C) Potassium nitrate
 - (D) All of the above
69. Minamata disease is caused by
- (A) Arsenic Poisoning
 - (B) Mercury Poisoning
 - (C) Lead Poisoning
 - (D) Phosphorus Poisoning
70. Which bone helps to identify the sex of a person?
- (A) Long bone
 - (B) Pelvic bone
 - (C) Femur bone
 - (D) Tibia
71. Enzyme that is used to join DNA fragments is called
- (A) DNA Restriction
 - (B) DNA Ligase
 - (C) DNA Polymerase
 - (D) Reverse Transcriptase

72. Summon is a document of the court which
- (A) provide money to witness by court
 - (B) provide legal immunity to witness by court
 - (C) compel to the attendance of witnesses before court
 - (D) is sent someone to jail without any evidence by court
73. Which of the following is not a rifled firearm?
- (A) Pistol
 - (B) AK 47
 - (C) Revolver
 - (D) Country-made firearm
74. The accelerants collected from arson sites are best analyzed by
- (A) TLC
 - (B) UV Spectroscopy
 - (C) IR
 - (D) GC-MS
75. Which of the following sections of Bharatiya Nyaya Sanhita (BNS) deals with criminal negligence?
- (A) Section 303
 - (B) Section 106
 - (C) Section 304A
 - (D) Section 108A
76. Wagner test is used for the screening of which of the following poisons
- (A) Cocaine
 - (B) Amphetamine
 - (C) Phencyclidine
 - (D) Barbiturates
77. The most suitable anticoagulant used for blood is
- (A) EDTA
 - (B) Methyl alcohol
 - (C) Sodium Chloride
 - (D) Potassium permanganate

78. Cherry red discolouration of blood is due to which of the following
- (A) Nitro haemoglobin
 - (B) Oxy haemoglobin
 - (C) Carboxy haemoglobin
 - (D) Hydroxy haemoglobin
79. Which of the following is a type of linear blood spatter stain?
- (A) Pool
 - (B) Wipe
 - (C) Cast-off
 - (D) Saturation
80. In Henry's Classification System, the Primary classification is based on which of the following pattern?
- (A) Radial Loop
 - (B) Whorl
 - (C) Arch
 - (D) Ulnar Loop
81. Indented writing can be restored by
- (A) Visual examination
 - (B) ESDA
 - (C) Microscopy
 - (D) UV radiation
82. Reinsch Test is used for the detection of
- (A) Lead
 - (B) Phosphorus
 - (C) Arsenic
 - (D) Copper
83. Lie detector does not measure
- (A) Blood Pressure
 - (B) Respiration
 - (C) Skin Conductivity
 - (D) Brain Electric oscillation

84. Which of the following is the meaning of Ricochet?
- (A) Tampered bullet
 - (B) Unfired bullet
 - (C) Deflection of the bullet
 - (D) Blunting of the bullet
85. Cyclotol is primarily composed of which of the following
- (A) RDX + PETN
 - (B) TNT + PETN
 - (C) RDX + TNT
 - (D) Picric acid + TNT
86. The shape of mitochondrial DNA is
- (A) Circular
 - (B) Twisted Ladder
 - (C) Triangular
 - (D) Rhombus
87. URL stands for
- (A) Unisource Resource Locator
 - (B) Uniform Resource Locator
 - (C) Universal Resource Link
 - (D) Unified Registry Locator
88. Which of the following sketching techniques is the most suitable for explosion cases?
- (A) Baseline
 - (B) Triangular
 - (C) Rectangular
 - (D) Polar
89. Which of the following statement is correct regarding hash value?
- (A) Hash value is written in binary number
 - (B) Hash value is independent of hash algorithm
 - (C) Hash value is 24 digit long
 - (D) Hash value of a file changes with change in content

90. Which of the following elements are present in Gun Shot Residue?
- (A) Lead, Copper, Silver
 - (B) Lead, Barium, Antimony
 - (C) Lead, Copper, Antimony
 - (D) Lead, Copper, Barium
91. In the determination of selenium in urine by AAS it was found that Beer's law applied up to 2ppm range. If the 2ppm standard was set at 100 and a blank set at zero, what would be the selenium concentration of sample that will read at 73?
- (A) 7.3 ppm
 - (B) 1.46 ppm
 - (C) 0.146 ppm
 - (D) 0.73ppm
92. The number of fundamental vibrations for linear molecules are calculated by using the formula.
- (A) $3N-5$
 - (B) $3N-6$
 - (C) $3-5N$
 - (D) $3-6N$
93. Water solution of a coloured compound has molar absorptivity (ϵ) of 3200 at 525 nm. Calculate the percentage transmittance (Given 3.40×10^{-4} mole/liter with 1.00 cm cell is used).
- (A) 81%
 - (B) 0.81%
 - (C) 8.1%
 - (D) 1.09%
94. Using the fundamental equation $dA = -SdT - pdV$ the maxwell relation is expressed as
- (A) $\left(\frac{\partial S}{\partial P}\right)_T = \left(\frac{\partial V}{\partial S}\right)_P$
 - (B) $\left(\frac{\partial S}{\partial V}\right)_T = \left(\frac{\partial P}{\partial T}\right)_S$
 - (C) $\left(\frac{\partial S}{\partial V}\right)_P = \left(\frac{\partial P}{\partial T}\right)_V$
 - (D) $\left(\frac{\partial T}{\partial V}\right)_S = \left(\frac{\partial P}{\partial S}\right)_T$

95. The mathematical expression of Onsager equation is

- (A) $\lambda_v = \lambda_\infty - (a\lambda_\infty + b)\sqrt{c}$
- (B) $\lambda_\infty = \lambda_v - (a\lambda_\infty + b)\sqrt{c}$
- (C) $\lambda_v = \lambda_\infty - (b\lambda_\infty + c)\sqrt{a}$
- (D) $\lambda_\infty = \lambda_v - (b\lambda_\infty + c)\sqrt{a}$

96. Acetic acid-chloroform-water system is component system.

- (A) four
- (B) three
- (C) two
- (D) one

97. The reaction $A \xrightarrow{k_1} B \xrightarrow{k_2} C$ is example of reaction.

- (A) chain
- (B) counter
- (C) competing
- (D) consecutive

98. Match the following frequencies with region of electromagnetic spectrum.

Column I	Column II
p. 700 MHz	i. Visible
q. 1000 cm^{-1}	ii. Ultraviolet
r. 5 cm^{-1}	iii. Infrared
s. 12500 cm^{-1}	iv. Microwave
t. $60,000\text{ cm}^{-1}$	v. Radiofrequency

- (A) p-iii, q-ii, r-iv, s-i, t-v
- (B) p-i, q-ii, r-iii, s-iv, t-v
- (C) p-v, q-iv, r-iii, s-ii, t-i
- (D) p-v, q-iii, r-iv, s-i, t-ii

99. The number of vibrational mode(s) of a carbon dioxide molecule that can be detected using infrared spectroscopy is

- (A) 1
- (B) 3
- (C) 2
- (D) 4

100. Correct trend in the bond order is
- (A) $O_2^+ > O_2^{2-} > O_2^1$
 - (B) $O_2^{2-} > O_2^- > O_2^+$
 - (C) $O_2^{2-} > O_2^+ > O_2^-$
 - (D) $O_2^+ > O_2^- > O_2^{2-}$
101. In a nuclear chemistry secular equilibrium is attained when
- (A) the parent nuclei has very short half-life period and daughter nuclei has long half-life period
 - (B) the daughter nuclei has very short half-life period and parent nuclei has long half-life period
 - (C) the parent nuclei has very long half-life period and daughter nuclei has short half-life period
 - (D) both parent and daughter nuclei has very long half-life period
102. Choose the correct principle of green chemistry which emphasize the need for renewable feedstock
- (A) Use of renewable feedstock
 - (B) Designing safer chemicals
 - (C) Atom economy
 - (D) Inherently safer chemistry for prevention of accident
103. Which one of the following compound is a strong electrolyte?
- (A) $C_6H_5-NH_2$
 - (B) NH_4OH
 - (C) $HCOOH$
 - (D) KCl
104. Find out the least stable complex of platinum.
- (A) $K_2 [Pt(C_2O_4)_3]$
 - (B) $K_2 [PtCl_4]$
 - (C) $K_2 [PtCl_6]$
 - (D) $[Pt(en)_3] Cl_4$

105. The shape of SCN^- is
- (A) Pyramidal
 - (B) Trigonalplanar
 - (C) Linear
 - (D) Bent
106. $[\text{Co}(\text{NH}_3)_5(\text{SO}_4)]\text{Br}$ and $[\text{Co}(\text{NH}_3)_5\text{Br}]\text{SO}_4$ are examples of
- (A) Coordination isomers
 - (B) Optical isomers.
 - (C) Linkage isomers.
 - (D) Ionization isomers.
107. The metal ion present in human carbonic anhydrase is
- (A) Zn^{+2}
 - (B) Cu^{+2}
 - (C) Mg^{+2}
 - (D) Fe^{+3}
108. Which one of the following is an amphoteric oxide?
- (A) Na_2O
 - (B) SO_2
 - (C) B_2O_3
 - (D) ZnO
109. Which one of the following is non-heme protein?
- (A) Hemoglobin
 - (B) Hemocyanin
 - (C) Myoglobin
 - (D) Cytochrome P-450
110. In starch-iodine test, the starch turns color on addition of iodine
- (A) Purple
 - (B) Green
 - (C) Blue
 - (D) Pink
111. The IUPAC name of $\text{CH}_3 - \text{CH}_2 - \text{CO} - \text{CH}_2\text{CH}_2 - \text{CO} - \text{OCH}_3$ is
- (A) Ethyl4-oxohexanoate
 - (B) Ethyl4-oxoheptanoate

- (C) Methyl4-oxoheptanoate
(D) Methyl4-oxohexanoate

112. The reaction $R-CO-N_3 \xrightarrow[H_2O]{\Delta} R-NH_2$ is an example of

- (A) Cope rearrangement
(B) Curtius rearrangement
(C) Hofmann rearrangement
(D) Lossen rearrangement

113. Read the following sentences carefully and choose the phrases which is NOT associated with an S_N1 reaction

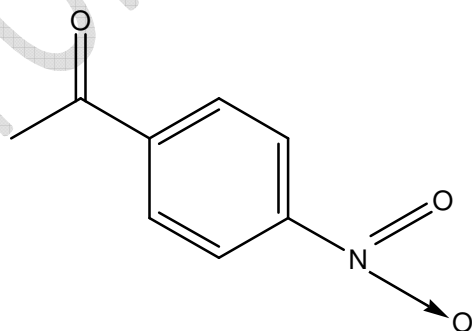
- I. Reaction rate is affected by solvent polarity
II. Reaction proceed with complete inversion of configuration
III. Rearrangement is possible
IV. The Strength of nucleophile is important in determining rate.

- (A) II and IV
(B) I and IV
(C) II and III
(D) Only IV

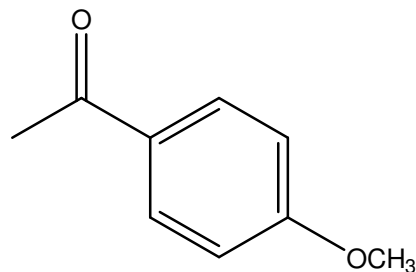
114. In a Simmons-smith reaction the reactive intermediate is a

- (A) Free radical
(B) Carbonium ion
(C) Carbanion
(D) Carbene

115. Choose the compound that will show the higher C=O IR stretching frequency.



(A)



(B)

- (A) compound(B)
(B) compound (A)

- (C) Both compounds have equal frequency
- (D) when recorded as a KBr pellet, (A) exhibits higher C=O stretching frequency; when recorded as Nujol mull, (B) exhibits higher C=O stretching frequency

116. Bakelite is obtained from phenol by reacting with

- (A) Formaldehyde
- (B) Urea
- (C) Acetaldehyde
- (D) Acetone

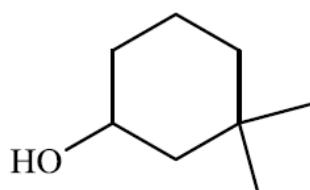
117. An organic compound having molecular formula $C_9H_{10}O_2$ exhibits the following spectral characteristics:

1H NMR: δ 9.72 (t, 1H), 7.1 (d, 2H), 6.7 (d, 2H), 3.8 (s, 3H), 3.6 (d, 2H) IR: $\sim 1720\text{ cm}^{-1}$

The most probable structure of the compound is

- (A)
- (B)
- (C)
- (D)

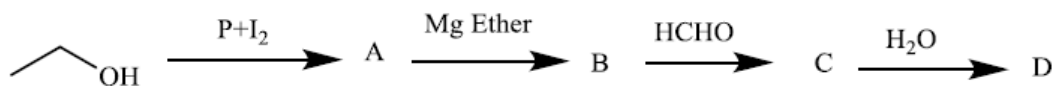
118. The IUPAC name of the compound



- (A) 3,3- dimethyl -1-hydroxycyclohexane
- (B) 1,1 – dimethyl -3-cyclohexanol

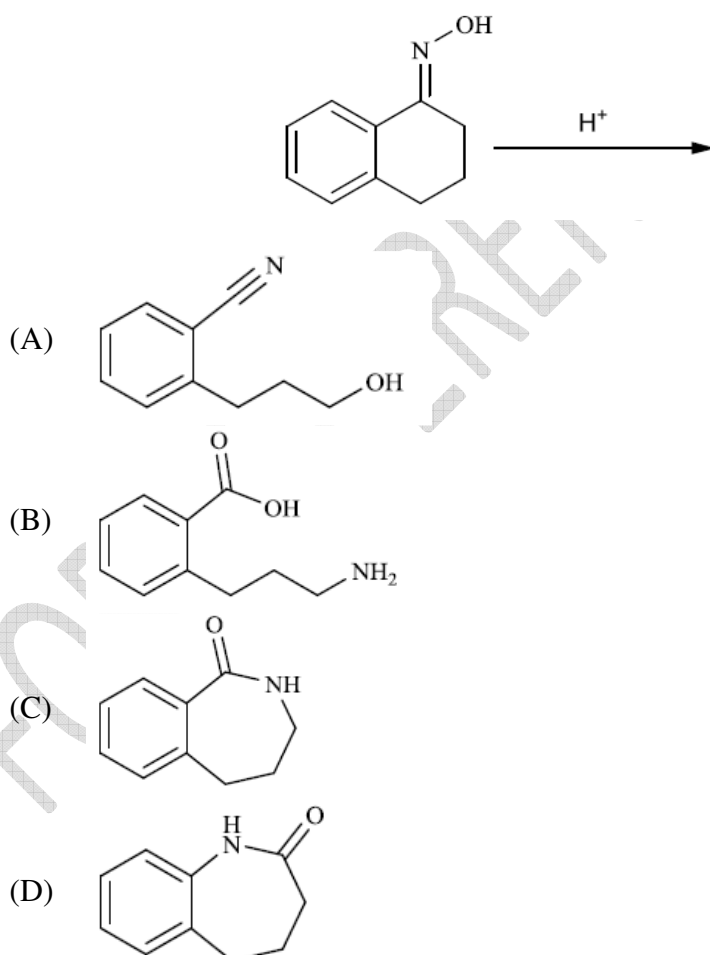
- (C) 3,3- dimethylcyclohexanol
 (D) 1,1 – dimethyl -3-hydroxycyclohexane

119. In the following sequence of reactions, the compound D is



- (A) propanal
 (B) propionic acid
 (C) propan-1-ol
 (D) propan-2-ol

120. The major product formed in the following reaction is



121. What is required for successful RFLP analysis?
- (A) Partially degraded DNA
 - (B) Intact genomic DNA
 - (C) Single-stranded DNA
 - (D) RNA instead of DNA
122. Which of the following is a potential biomarker in human sweat?
- (A) Dermicidin
 - (B) Dermocaden
 - (C) Apocrine
 - (D) Derma
123. The amount of creatinine excreted in urine is primarily proportional to
- (A) Kidney function
 - (B) Water intake
 - (C) Blood pressure
 - (D) Muscle mass
124. What shape is typically formed when a blood drop strikes a surface at a perpendicular angle (90°)?
- (A) Elliptical stain
 - (B) Circular stain
 - (C) Irregular stain
 - (D) Linear stain
125. Which trigonometric relationship describes the angle of impact (α) of a blood drop?
- (A) $\sin(\alpha) = w/l$
 - (B) $\sin(\alpha) = l/w$
 - (C) $\cos(\alpha) = w/l$
 - (D) $\tan(\alpha) = w/l$
126. What property of blood primarily influences its resistance to flow?
- (A) Surface tension
 - (B) Viscosity
 - (C) Cohesion force
 - (D) Gravity
127. What type of biological evidence usually contains nucleated cells?
- (A) Probative biological evidence

- (B) Hair Root
 - (C) Blood
 - (D) All of the above
128. Which system is useful for determining the number of male perpetrators in rape cases?
- (A) X-STR
 - (B) Y-STR
 - (C) VNTR
 - (D) SNRR
129. Which type of DNA does not obey the rules of Mendelian inheritance?
- (A) mtDNA
 - (B) Nuclear DNA
 - (C) Both mtDNA and Nuclear DNA
 - (D) None of the above
130. Which form of hemoglobin has a higher affinity for oxygen?
- (A) Fetal hemoglobin
 - (B) Embryonic hemoglobin
 - (C) Fetal and embryonic hemoglobin
 - (D) Embryonic and adult hemoglobin
131. If one parent has blood group AB and the other has blood group O, the possible blood group(s) of their child will be
- (A) O
 - (B) A
 - (C) B and A
 - (D) B and AB
132. Why is the benzidine test no longer used for forensic testing?
- (A) Because it is carcinogenic
 - (B) Because it is expensive
 - (C) Because it is time-consuming
 - (D) Because it utilizes anti-animal antibodies

133. The majority of serology tests are based on which immunoglobulins?

- (A) IgM
- (B) IgG
- (C) IgK
- (D) IgD-1

134. DNA can be isolated from

- (A) Root of a hair follicle
- (B) WBC
- (C) Semen
- (D) All of the above

135. Absorption elution technique is used for the detection of

- (A) Fingerprint
- (B) Seminal stain
- (C) Blood stain
- (D) Fecal stain

136. Karyotyping of the foetus is done from all except

- (A) Lymphocyte
- (B) Monocyte
- (C) Aminocyte
- (D) Fibroblast

137. A fish having no scales on its body is

- (A) Dog Fish
- (B) Cat Fish
- (C) Carp
- (D) Mullet

138. Microsatellites are also called

- (A) Short Tandem Repeats
- (B) Variable Number Tandem Repeats
- (C) Polymarkers
- (D) None of the above

139. P30 is present in
- (A) Saliva
 - (B) Urine
 - (C) Blood
 - (D) Semen
140. A concentrated extract of the urine stain may give a characteristic smell due to evolved by bacterial degradation of urea
- (A) Bilirubin
 - (B) Sugar
 - (C) Sodium
 - (D) Ammonia
141. What is the chromosomal location of HLA DQA1?
- (A) 9P
 - (B) 8P
 - (C) 7P
 - (D) 6P
142. Which of the followings parts does not constitute a part of single nephron?
- (A) Glomerulus
 - (B) Henle's loop
 - (C) Collecting duct
 - (D) Renal artery
143. Pericardial fluid is most similar in composition to
- (A) Cerebrospinal fluid
 - (B) Synovial fluid
 - (C) Blood plasma
 - (D) Glomerular filtrate
144. The total number of ear bones in one side are
- (A) 8
 - (B) 3
 - (C) 4
 - (D) 2
145. Auxospores are formed by
- (A) Desmids

- (B) Diatoms
 - (C) Decomposing bacteria
 - (D) Deuteromycetes
146. The chemical substance found in the surface layer of cytoplasm of spermatozoa is
- (A) Fertilizin
 - (B) Agglutinin
 - (C) Hyaluronidase
 - (D) Antifertilizin
147. Earliest fossil form in phylogeny of horse was
- (A) Equus
 - (B) Meshippus
 - (C) Eohippus
 - (D) Mericippus
148. C-value paradox refers to the presence of
- (A) Large number of ribosomes than needed for polypeptide synthesis
 - (B) A more DNA than needed for coding
 - (C) Less number of RNA polymerase than needed for RNA
 - (D) Less number of t-RNA than needed for polypeptide synthesis
149. If somatic cells of a human male contain a single Barr body in its nucleus the most likely genetic constitution of the person will be
- (A) XXYY
 - (B) XXY
 - (C) XO
 - (D) XYY
150. Blind spot in eye is located
- (A) where cornea leaves the retina
 - (B) where optic nerve leaves the retina
 - (C) in fovea centralis
 - (D) in the middle of lens

ANSWER KEY

Subject Name:		FORENSIC SCIENCE							
SI No.	Key	SI No.	Key	SI No.	Key	SI No.	Key	SI No.	Key
1	B	31	B	61	D	91	B	121	B
2	A	32	C	62	A	92	A	122	A
3	A	33	B	63	D	93	C	123	D
4	C	34	C	64	A	94	B	124	B
5	B	35	C	65	B	95	A	125	A
6	B	36	C	66	A	96	B	126	B
7	B	37	A	67	A	97	D	127	D
8	C	38	B	68	D	98	D	128	B
9	B	39	B	69	B	99	B	129	A
10	B	40	A	70	B	100	D	130	C
11	B	41	B	71	B	101	C	131	C
12	A	42	A	72	C	102	A	132	A
13	A	43	C	73	D	103	D	133	B
14	C	44	B	74	D	104	B	134	D
15	D	45	C	75	B	105	C	135	C
16	A	46	A	76	A	106	D	136	B
17	D	47	B	77	A	107	A	137	B
18	A	48	B	78	C	108	D	138	A
19	A	49	A	79	C	109	B	139	D
20	C	50	B	80	B	110	C	140	D
21	B	51	B	81	B	111	D	141	D
22	C	52	C	82	C	112	B	142	D
23	C	53	B	83	D	113	A	143	C
24	C	54	B	84	C	114	D	144	B
25	C	55	A	85	C	115	B	145	B
26	A	56	C	86	A	116	A	146	D
27	C	57	D	87	B	117	C	147	C
28	C	58	C	88	D	118	C	148	B
29	B	59	C	89	D	119	C	149	B
30	C	60	A	90	B	120	D	150	B