Scientific Assistant (Toxicology)

1. Arrange in the ascending order of presence of Δ9THC in the following:

   (i) Charas (ii) Bhang

   (iii) Ganja (iv) Charas oil

   Codes :

   (A) (iv), (i), (iii), (ii)

   (B) (ii), (iii), (i), (iv)

   (C) (iv), (ii), (i), (iii)

   (D) (ii), (iv), (i), (iii)

2. Hollow Cathode Lamp (HCL) is used in which of the following:

   (A) Atomic Absorption Spectrometer

   (B) Atomic Emission Spectrometer

   (C) Infra Red Spectrometer

   (D) X-ray Fluorescence Spectrometer

3. By which of the following method Nicotine is isolated from alkaline solution?

   (A) Dry ashing

   (B) Wet digestion

   (C) Distillation

   (D) Sublimation

4. Wet digestion method is used for the extraction of _____ poisons from Viscera:

   (A) Alkaloids

   (B) Pesticides

   (C) Toxic heavy metals

   (D) Barbiturates

5. For preparing Heroin from morphine, which of the following is used as acetylating reagent?

   (A) Acetic anhydride

   (B) Sodium Hydroxide

   (C) Ammonium Hydroxide

   (D) Calcium Hydroxide

6. Ethanol is absorbed into blood from:

(A) Stomach and small intestine

(B) Liver and large intestine

(C) Kidney and liver

(D) Stomach and large intestine

7. Which one of the following is not an insecticide of vegetable origin?

(A) Nicotine

(B) Pyrethrins

(C) Rotenone

(D) Chlorodane

8. Rectified spirit cannot be used for preserving the viscera in case of:

(A) Aconite poisoning

(B) Metallic poisoning

(C) Phenol poisoning

(D) Opiate poisoning

9. Which of the following is an inebriant poison?

(A) Opium

(B) Alcohol

(C) Organophosphorus

(D) Barbiturate

10. Considering mode of administration, poison acts more rapidly when:

(A) Inhaled in gaseous state

(B) Injected intramuscularly

(C) Injected subcutaneously

(D) Applied to skin

11. In a suspected case of poisoning by strychnine, which organ should be preferably preserved for toxicological analysis?

(A) Brain

(B) Spleen

(C) Kidney

(D) Liver

12. Neutron Activation Analysis is used to identify which of the following :

(A) Ink (B) Toxic Heavy Metals

(C) Blood (D) Drugs

13. A current which will exist even if no light is falling on the UV-Vis detector is known as:

(A) Dark Current

(B) False Current

(C) True Current

(D) Pseudo Current

14. Exciter filter is a part of which of the following microscope :

(A) Polarising microscope

(B) Phase-contrast microscope

(C) Fluorescence microscope

(D) Transmission Electron microscope

15. Radioactivity of a substance can be measured by:

(A) TCD detector

(B) MCT detector

(C) EC detector

(D) Geiger Muller Counter

16. Which among the following is not an example of toxin substance?

(A) Hydrocynic acid

(B) Snake venom

(C) Spanish fly

(D) Hydrochloric acid

17. Detection of poison from biological matrix is difficult due to the:

(A) Presence of protein and fat

(B) Presence of very less amount of poison

(C) Both of the above

(D) None of the above

18. Optical components in UV spectrometer are made up of:

(A) Glass

(B) Quartz

(C) Sodium-Halide Bromide

(D) Plastic

19. In case of carbolic acid poisoning, which preservative should be used?
    (A) Saturated common salt solution
    (B) Absolute alcohol
    (C) Denatured alcohol
    (D) Formalin

20. In case of fluoride poisoning, blood should be preserved with:
    (A) Sodium citrate
    (B) Sodium chloride
    (C) Sodium nitrite
    (D) Heparin

21. Cramps are caused by:
    (A) Cyanides
    (B) Excess of liquor
    (C) Hyoscine
    (D) Lead

22. Delirium is caused by:
    (A) Opium
    (B) Dhatura
    (C) Nux-vomica
    (D) Calotropis

23. How the demulcents work?
    (A) Act chemically to form a non-toxic compounds
    (B) Oxidizes the poison to non-toxic
    (C) Prevent the absorption of the poison
    (D) Produce opposite effects to the poison

24. Which one of the following is a specific antidote against morphine?
    (A) Atropine
    (B) Chloroform
    (C) Pilocarpine
    (D) Nalorphine

25. The correct method of preserving clothes stained with vomit in a poisoning case is :

(A) Air dried in shade and preserved

(B) Sun dried and preserved

(C) Preserved with sodium chloride solution

(D) Immediately packed in polythene bag

26. Which drug is not identified by chemical tests in decomposed tissues?

(A) DDVP

(B) Aconite

(C) Cyanide

(D) Oxazepam

27. Which internal standard is used for the determination of alcohol in blood by head space gas chromatographic method?

(A) Ethyl acetate

(B) N-propanol

(C) Butyl alcohol

(D) Amyl alcohol

28. Formalin is :

(A) 40% Formic Acid

(B) 80% Formic Acid

(C) 40% Formaldehyde

(D) 80% Formaldehyde

29. Careless handling of poisonous substance is punishable under which of the following IPC section:

(A) 284

(B) 299

(C) 201

(D) 328

30. Failure to inform immediately a homicide poisoning case by a private doctor is punishable under which of the following IPC section:

(A) 201

(B) 193

(C) 176

(D) 324

31. According to the Drugs and Cosmetic Rule 1945, the poisons are classified under:

(A) Schedule C drugs

(B) Schedule E drugs

(C) Schedule F drugs

(D) Schedule G drugs

32. Nux vomica is the example of:

(A) Animal Poison

(B) Mechanical Poison

(C) Food Poison

(D) Plant Poison

33. Bertrand lens is a part of which of the following microscope:

(A) Steriomicroscope

(B) Comparison microscope

(C) Polarising microscope

(D) Fluorescence microscope

34. A lens with a variable focal length is known as:

(A) Normal lens

(B) Telephoto lens

(C) Wide angle lens

(D) Zoom lens

35. X-ray spectra are quite simple because:

(A) They result from transition between energy levels of the innermost electrons

(B) They result from transition between every levels of the outermost electrons

(C) They result from transition between energy levels of middle orbital electrons

(D) No change in transition levels of electrons

36. Spherical aberration means:

(A) That all portions of a lens have common focus

(B) That inner and outer areas of lens do not have common focus

(C) That the lens corrected for two wavelengths of radiation

(D) It is corrected for three wavelengths of radiation

37. Detectors in IR spectrophotometry include the following :

(a) Golay detector

(b) Electron capture detector

(c) Photo detector

(d) Thermocouples

Codes :

(A) (a) and (b) are correct

(B) (b) and (c) are correct

(C) (c) and (d) are correct

(D) (a) and (d) are correct

38. Blood Alcohol Concentration (BAC) is measured in:

(A) Weight/Volume percent

(B) Volume/Volume percent

(C) Weight/Weight percent

(D) All of the above

39. Heroin is easily differentiated from its cutting agents by:

(A) Colour/spot test

(B) Thin Layer Chromatography

(C) UV-Vis spectrophotometry

(D) IR spectrophotometry

40. Sodium-halide-bromide cell windows are used in:

(A) IR spectrometry

(B) UV spectrometry

(C) Raman spectrometry

(D) Atomic absorption spectrometry

41. In X-ray spectroscopy, atoms are excited by:

(A) Direct bombardment with electrons

(B) Bombardment with protons

(C) Irradiation with X-rays of shorter wavelengths

(D) All the above

42. Deviations from Beer's Law fall into which categories?

(A) Real

(B) Instrumental

(C) Chemical

(D) All of the above

43. One of the following is not the component of Kastle-Meyer Test:

(A) Phenolphthalein

(B) Glacial Acetic Acid

(C) Zinc dust

(D) Potassium Hydroxide

44. LSD is derived from which of the following plant?

(A) Cannabis sp.

(B) Papaver Somniferum

(C) Erthroxylum sp.

(D) Claviceps purpurea

45. Gas chromatography was developed by:

(A) G.D. Kohler and K. Thide

(B) Henry and Pascal

(C) Piobert and Pascal

(D) Leduce and K. Thide

46. Chromatography was first reported by:

(A) Ramsey

(B) Henry

(C) Pascal

(D) Leduce

47. The image seen through a compound microscope is:

(A) Virtual

(B) Real

(C) False

(D) Imaginary

48. NMR is a tool to investigate:

(A) Nuclear structure

(B) Electron structure

(C) Scattering effect of light

(D) Reflecting effect of light

49. MCT detector is used in:

(A) FTIR spectrometry

(B) AAS

(C) GC-MS

(D) LC-MS

50. Thin layer chromatography is:

(A) partition chromatography

(B) electrical mobility of ionic species

(C) adsorption chromatography

(D) none of the above

51. Match the following:

List – I	List – II
a. Cardiac	i. Brucine
b. Deleriant	ii. Calotropin
c. Spinal	iii.Aconitine
d. Irritant	IV. Cannabinoid

Codes:

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

52. Following column packing materials are available in HPLC:

(A) Microporous

(B) Pellicular

(C) Bonded Phase

(D) All of the above

53. Which of the following is not an IR vibrational mode?

(A) Stretching (B) Scissoring

(C) Rocking (D) Rolling

54. Which of the following will oscillate the fastest?

(A) A large mass on a weak spring

(B) A large mass on a stiff spring

(C) A small mass on a stiff spring

(D) A small mass on a weak spring

55. Antidote in Methyl alcohol poisoning is:

(A) Ethanol
(B) Phethidine
(C) glycerol
(D) None of the above

56. Hypsochromic shift means:

(A) absorption maximum shifted to longer wave length
(B) absorption maximum shifted to shorter wave length
(C) An increase in molar absorptivity
(D) A decrease in molar absorptivity

57. Adsorption is:

(A) Whole body phenomenon
(B) Surface Phenomenon
(C) Both (A) and (B)
(D) None of the above

58. Electron capture detector is basically used for the detections of:

(A) Hydrocarbons
(B) Halogenated compounds
(C) Nitrogenous compound
(D) Phosphated compounds

59. Infra Red detector is a powerful tool for distinguishing:

(A) Isomer

(B) Isotope

(C) Isobar

(D) None of the above

60. Which of the following is a hallucinogen drug?

(A) Methadone

(B) Eliazepam

(C) Amphetemine

(D) LSD

61. Use of the steps like dilution, extraction, filtering is called:

(A) Dry chemistry

(B) Wet chemistry

(C) Process

(D) Phase chemistry

62. Which of the following is accurate & precise Instrument Technique used for quantization of Ethyl Alcohol?

(A) GC-MS

(B) HS-GC

(C) HPLC

(D) HPTLC

63. Radiations emitted by radioactive elements are:

(A) Alpha rays

(B) Gamma rays

(C) Beta rays

(D) All of the above

64. The main ingredient of Mandrax is:

(A) PCP

(B) STP

(C) Methaqualone

(D) GHB

65. Dry ashing method is used for the extraction of following poisons from viscera :

(A) Organic volatile

(B) Organic non-volatile

(C) Metallic

(D) None of the above

66. Which of the following color test is applied for the detection of opiates?

(A) Marquis

(B) Mecke

(C) Froehde's

(D) All of the above

67. Electrode less Discharge Lamp (EDL) is used in:

(A) Atomic Absorption Spectrometer

(B) Atomic Emission Spectrometer

(C) Infra-red Spectrometer

(D) X-ray Fluorescence Spectrometer

68. Basic requirements of a monochromator are:

(A) Resolution

(B) Spectral Range

(C) Dispersion

(D) All of the above

69. Which of the following technique provides a unique fingerprint of a chemical structure :

(A) IR Spectrometry

(B) UV Spectrometry

(C) NIR Spectrometry

(D) Visible Spectrometry

70. Mass Spectrometry requires the sample to be in :

(A) Liquid state

(B) Vapour state

(C) Solid state

(D) Semisolid state

71. In aluminum phosphide poisoning case, death results due to multi-organ failure, which includes the following except:

(A) Lungs (B) Kidney

(C) Liver (D) Heart

72. Toxicology is the study of:

(A) Prevalence of disease and death in a population

(B) Adverse effects of chemicals on living organisms

(C) The appearance of symptoms produced by infectious agents

(D) Word origins

73. In SEM, the incident beam is focused by means of:

(A) Lens

(B) Mirrors

(C) Electromagnets

(D) Slits

74. Which of the following instrument can view a particle under a microscope while at the same time a beam of light is directed at the particle in order to obtain its absorption spectrum?

(A) Atomic force microscope

(B) XRF spectrometer

(C) Micro spectrophotometer

(D) XRD spectrometer

75. Kozelaka and Hine method is used for the quantitative estimation of:

(A) Ethyl Alcohol

(B) Opium

(C) Cocaine

(D) Cannabis

76. Which of the following colour tests are applied for the detection of poly halogenated hydrocarbons?

(A) Fujiwara Test

(B) Koppanyi-Zwikker Test

(C) Sodium nitroprusside

(D) Cobalt thiocyanate

77. Which of the following is a poisonous mushroom species?

(A) Amanita phalloides

(B) Morchella esculenta

(C) Boletus edulis

(D) Cantharellus cibarius

78. Scott's test is applied for the detection of:

(A) Amphetamines

(B) Barbiturates

(C) Opiates

(D) Cocaine

79. A classical example of the poison that can give both systemic and local effects is:

(A) Oxalic acid (B) Sulfuric acid

(C) Acetic acid (D) Formic acid

80. Lysergic acid is found in:

(A) Ergot fungus

(B) Psilocybe mexicanna

(C) Lophophora Williamsie

(D) Argimoni mexicanna

81. Aconite belongs to:

(A) Acid

(B) Alkalis

(C) Alcohol

(D) Alkaloid

82. Size exclusion chromatography applied for the analysis of:

(A) Alcohol

(B) Solvent

(C) Polymer & Protein

(D) None of the above

83. Lambert & Beer's law applied for:

(A) GC

(B) UV

(C) TLC

(D) None of the above

84. IR analysis mainly used to determine the:

(A) Functional group

(B) Origin

(C) Cations

(D) None of the above

85. Raman Spectroscopy involve with:

(A) Light absorption

(B) Scattering of light

(C) Decomposed Light

(D) None of the above

86. Visible range (400-800nm) is generated by:

(A) Tungsten Lamp

(B) Deuterium Lamp

(C) Hydrogen Lamp

(D) None of the above

87. Which of the following drugs develop orange-brown colour with Marquis reagent?

(A) Opium derivatives

(B) Amphetamines

(C) Barbiturates

(D) Phenothiazines

88. The blood of a drunken driver drawn to know the concentration of alcohol is preserved with:

(A) Sodium chloride

(B) EDTA

(C) Sodium fluoride

(D) Phenylmercuric nitrate

89. ‘Stass-Otto’ process is used for:

(A) Extraction of poisons

(B) Extraction of DNA

(C) Extraction of antigens

(D) Isolation of compliments

90. Which of the following is an active principle of Abrus?

(A) Abrin

(B) Adbrin

(C) Abrinine

(D) Abricodine

91. In case of poisoning of living persons, the following are preserved, except:

(A) Vomit

(B) Excereta

(C) Stomach wash

(D) Unsoiled clothings

92. Which of the following chemical substance responsible for hallucinogenic properties of cannabis?

(A) Tetrahydrocannabinol (THC)

(B) Morphine

(C) Codeine

(D) None of the above

93. _____ is used for the relief of anxiety & tension without inducing sleep.

(A) Tranquilizers

(B) Analgesics

(C) Narcotic drug

(D) Anesthetic drug

94. Which of the following is a chemical derivative of morphine made by reacting morphine with acetic anhydride.

(A) Heroin

(B) Acitylcodine

(C) Narcotine

(D) Tropine

95. In Scanning Electron Microscope, the magnified image of a particle is formed by:
(A) Primary electrons
(B) The secondary and back-scattered electrons
(C) X-rays generated when the electron beam strikes the particle
(D) All of the above

96. The wavelength of waves associated with electrons accelerated through a potential difference of 'V' volts is:
(A) Directly proportional to V
(B) Directly proportional to $\sqrt{V}$
(C) Inversely proportional to V
(D) Inversely proportional to $\sqrt{V}$

97. Which one of the following is a primary constituent of opium:
(A) Diamorphine
(B) Acetyl Codine
(C) Morphine
(D) Monoacetyl morphine

98. How many components are there in Light:
(A) One
(B) Two
(C) Three
(D) Four

99. The venom of snakes is a secretion from which of the following glands:
(A) Sub mandibular
(B) Sub lingual
(C) Parotid
(D) Gastric

100. Which one of the following is used as radiation source in Raman Spectroscopy:
(A) Flame
(B) Plasma
(C) Hallow Cathode Lamp
(D) Lasers

Rough Work