

JSO -NDPS/FN - Examination

1. If all roses are flowers and some flowers fade quickly, which of the following is necessarily true?

- ☐ A All roses fade quickly
- ☒ B Some flowers do not fade quickly
- ☐ C Some roses fade quickly
- ☐ D All flowers fade quickly

2. Find the odd one out:

- ☐ A Square
- ☒ B Circle
- ☐ C Triangle
- ☐ D Rectangle

3. Arrange the words in a logical sequence: 1. Child, 2. Infant, 3. Adolescent, 4. Adult

- ☐ A 1-2-3-4
- ☐ B 2-1-3-4
- ☒ C 2-1-4-3
- ☐ D 1-3-2-4

4. Pointing to a photograph, a man said, "I have no brothers and sisters, but that man's father is my father's son." Who is in the photograph?

- ☒ A The man's father
- ☐ B The man's son
- ☐ C The man's uncle
- ☐ D The man himself

5. If in a certain code, "WATER" is written as "YCVGT", how is "FIRE" written in that code?

- ☒ A HKVG
- ☐ B HGTV
- ☐ C HKTG
- ☐ D GKUT

6. If 5 cats catch 5 mice in 5 minutes, how many cats are needed to catch 100 mice in 100 minutes?

- ☒ A 5
- ☐ B 10
- ☐ C 20
- ☐ D 25

7. A is to the South of B, C is to the East of B. In which direction is A with respect to C?

- ☐ A North-East
- ☐ B North-West
- ☐ C South-East
- ☒ D South-West

8. A train 180 meters long is running at a speed of 54 km/h. In how much time will it pass a platform of 120 meters?

- ☐ A 10 sec
- ☐ B 15 sec
- ☒ C 20 sec
- ☐ D 25 sec

9. If a person spends 30% of his income and saves ₹2800, find his total income.

- ☒ A 4000
- ☐ B 5000
- ☐ C 6000
- ☐ D 7000

10. A clock is set to show the correct time at 9:00 AM. It gains 10 minutes in 3 hours. What will be the actual time when the clock shows 3:00 PM?

- ☒ **A** 2:40 PM
- ☐ **B** 2:50 PM
- ☐ **C** 3:10 PM
- ☐ **D** 3:20 PM

11. The average weight of 10 people is 50 kg. If one person leaves and a new person joins, increasing the average by 1 kg, what is the weight of the new person?

- ☒ **A** 60 kg
- ☐ **B** 59 kg
- ☐ **C** 58 kg
- ☐ **D** 57 kg

12. The sum of two numbers is 100, and their difference is 20. What is the larger number?

- ☐ **A** 40
- ☐ **B** 50
- ☒ **C** 60
- ☐ **D** 70

13. Identify the correct synonym for "Abundant"

- ☐ **A** Scarce
- ☒ **B** Plentiful
- ☐ **C** Rare
- ☐ **D** Little

14. Choose the correct preposition: He is good ____ mathematics.

- ☐ **A** on
- ☐ **B** in
- ☒ **C** at
- ☐ **D** over

15. Find the correctly arranged sentence: Sentence parts: 1. A great deal of research 2. has been done 3. on the impact of climate change 4. in recent years

A 1-3-2-4

✓ **B** 1-2-3-4

C 3-1-4-2

D 2-1-3-4

16. Select the correct meaning of the idiom: "Burn the midnight oil"

A Waste time

✓ **B** Work late at night

C Sleep early

D Light a lamp

17. Identify the grammatically correct sentence:

A She don't like coffee.

B She doesn't likes coffee.

✓ **C** She doesn't like coffee.

D She didn't liked coffee.

18. Find the word that fits in both blanks: "She gave me a ___ of advice, and I found the missing ___ of the puzzle."

A piece

B peace

C part

D section

19. Choose the correct option: "Neither of the two brothers ___ present at the meeting."

A were

✓ **B** was

C are

D be

20. Identify the sentence with the correct usage of a modal verb:

- ☐ A You should to sleep early.
- ☐ B She can plays the piano.
- ☒ C We must finish the work on time.
- ☐ D He might go to the party.

21. Which gas is commonly used in fire extinguishers?

- ☒ A Oxygen
- ☐ B Carbon dioxide
- ☐ C Nitrogen
- ☐ D Hydrogen

22. Which vitamin is responsible for blood clotting?

- ☐ A Vitamin A
- ☐ B Vitamin B
- ☐ C Vitamin C
- ☒ D Vitamin K

23. Which part of the human brain is responsible for balance and coordination?

- ☐ A Cerebrum
- ☒ B Cerebellum
- ☐ C Medulla oblongata
- ☐ D Hypothalamus

24. The phenomenon where light bends as it passes from one medium to another is called:

- ☒ A Reflection
- ☐ B Diffraction
- ☐ C Refraction
- ☐ D Dispersion

25. In a DNA molecule, the nitrogenous base adenine always pairs with:

- ☐ A Guanine
- ☐ B Cytosine
- ☒ C Thymine
- ☐ D Uracil

26. Which of the following is NOT a part of forensic science?

- ☐ A DNA analysis
- ☐ B Crime scene investigation
- ☒ C Astronomy
- ☐ D Fingerprint analysis

27. What does the term "chain of custody" refer to?

- ☐ A The sequence of events leading to a crime
- ☐ B The legal process of convicting a suspect
- ☒ C The handling and documentation of evidence from collection to court
- ☐ D The order of police ranks in forensic units

28. Which branch forensic science is used to analyze handwriting?

- ☐ A Ballistics
- ☒ B Questioned Document Examination
- ☐ C Toxicology
- ☐ D Serology

29. What is the primary function of forensic science laboratories?

- ☐ A Conduct criminal trials
- ☐ B Store weapons used in crimes
- ☒ C Analyze physical evidence scientifically
- ☐ D Provide legal counsel

30. Which type of evidence includes blood, hair, and fibers?

- ☐ A Testimonial evidence
- ☒ B Physical evidence
- ☐ C Digital evidence
- ☐ D Psychological evidence

31. What is the role of forensic odontologists?

- ☒ A Identifying dead bodies using dental records
- ☐ B Analyzing gunshot residues
- ☐ C Examining bloodstains
- ☐ D Studying skeletal remains

32. What is the significance of the chain of custody in legal proceedings?

- ☐ A It ensures evidence is properly analyzed
- ☒ B It prevents evidence tampering
- ☐ C It helps detectives track suspects
- ☐ D It allows media access to crime scenes

33. Which type of forensic evidence is most useful in establishing personal identity?

- ☒ A DNA analysis
- ☐ B Fiber examination
- ☐ C Paint analysis
- ☐ D Soil comparison

34. What is the first step in crime scene processing?

- ☐ A Collecting evidence
- ☐ B Documenting the scene
- ☒ C Securing the crime scene
- ☐ D Interviewing witnesses

35. Which of the following is NOT a part of crime scene documentation?

- ☐ A Sketching
- ☐ B Photography
- ☒ C Eyewitness testimony
- ☐ D Note taking

36. Which forensic technique is used to detect forged documents?

- ☐ A Electrophoresis
- ☒ B Spectroscopy
- ☐ C ELISA
- ☐ D Microscopy

37. Which factor affects the admissibility of forensic evidence in court?

- ☐ A Media coverage
- ☒ B Proper documentation and chain of custody
- ☐ C Number of suspects arrested
- ☐ D Jury preferences

38. What does forensic toxicology primarily study?

- ☒ **A** Drug metabolism in the body
- ☐ **B** Bullet trajectories
- ☐ **C** DNA structure
- ☐ **D** Fingerprint patterns

39. Which method is most effective for detecting latent fingerprints?

- ☐ **A** Ballistic analysis
- ☒ **B** Superglue fuming
- ☐ **C** DNA profiling
- ☐ **D** Blood spatter analysis

40. Which of the following is an example of a volumetric analytical method?

- ☐ **A** Chromatography
- ☐ **B** Spectroscopy
- ☒ **C** Titration
- ☐ **D** Microscopy

41. What does a buffer solution do?

- ☐ **A** Increases the pH of a solution
- ☒ **B** Maintains a constant pH despite adding acid or base
- ☐ **C** Completely neutralizes acids and bases
- ☐ **D** Changes color when exposed to acid

42. Which method is used to separate compounds based on their distribution ratio?

- ☐ **A** Volumetric analysis
- ☒ **B** Extraction
- ☐ **C** Gravimetric analysis
- ☐ **D** Spectroscopy

43. Which of the following is an example of a masking agent in analytical chemistry?

- ☒ **A** EDTA
- ☐ **B** NaCl
- ☐ **C** HCl
- ☐ **D** Glucose

44. Which of the following extractions requires high-frequency sound waves?

- ☐ A Heat reflux extraction
- ☐ B Solid phase extraction
- ☒ C Ultrasonic extraction
- ☐ D Accelerated solvent extraction

45. Which reagent is commonly used in organic synthesis for oxidation reactions?

- ☒ A KMnO_4
- ☐ B NaOH
- ☐ C HCl
- ☐ D NH_3

46. Which property does NOT affect the extraction efficiency in liquid-liquid extraction?

- ☐ A Temperature
- ☐ B Distribution coefficient
- ☐ C pH
- ☒ D Color of the solution

47. Which of the following techniques is NOT a classical analytical method?

- ☐ A Gravimetric analysis
- ☐ B Titration
- ☒ C Spectroscopy
- ☐ D Volumetric analysis

48. What happens to the pK_a value when temperature increases?

- ☐ A Increases
- ☒ B Decreases
- ☐ C Remains constant
- ☐ D Becomes zero

49. In heat reflux extraction, what is the main advantage?

- ☐ A Faster extraction time
- ☒ B Reduced solvent loss
- ☐ C High-temperature stability
- ☐ D No need for sample preparation

50. Which statistical method is used to reduce dimensionality in large datasets?

- ☐ A T-test
- ☐ B Chi-square test
- ☒ C Principal Component Analysis (PCA)
- ☐ D ANOVA

51. Which method is used to determine the end point in gravimetric analysis?

- ☐ A Change in temperature
- ☒ B Mass of the precipitate
- ☐ C Conductivity measurement
- ☐ D Color change

52. Which of the following factors affects the efficiency of masking agents in complexometric titration?

- ☐ A Temperature
- ☒ B Ionic strength of the solution
- ☐ C Wavelength of light
- ☐ D Boiling point of solvent

53. Which of the following is a naturally occurring narcotic drug?

- ☐ A LSD
- ☒ B Cocaine
- ☐ C Methamphetamine
- ☐ D MDMA

54. What is the primary psychoactive component of Cannabis sativa?

- ☐ A Morphine
- ☐ B Cocaine
- ☒ C Tetrahydrocannabinol (THC)
- ☐ D Codeine

55. Which act regulates narcotic drugs and psychotropic substances in India?

- ☐ A IPC Act 1860
- ☒ B NDPS Act 1985
- ☐ C Drugs and Cosmetics Act 1940
- ☐ D Narcotics Control Act 1990

56. Which of the following drugs is classified as a benzodiazepine?

- ☐ A Heroin
- ☐ B LSD
- ☒ C Diazepam
- ☐ D Cocaine

57. Which part of the *Papaver somniferum* plant is used to produce opium?

- ☐ A Leaves
- ☐ B Flowers
- ☒ C Seed capsule
- ☐ D Roots

58. Which of the following is a designer drug?

- ☐ A Heroin
- ☐ B LSD
- ☐ C Fentanyl
- ☒ D Cathinone derivatives

59. Which analytical technique is commonly used to detect narcotic drugs in forensic samples?

- ☒ A Mass Spectrometry
- ☐ B X-ray Diffraction
- ☐ C pH Titration
- ☐ D Flame Test

- 60.** Which controlled substance is commonly used as an anesthetic and known for its hallucinogenic effects?
- ☐ A MDMA
 - ☒ B Ketamine
 - ☐ C Morphine
 - ☐ D Cocaine
- 61.** Which drug is commonly known as 'Ecstasy'?
- ☐ A LSD
 - ☒ B MDMA
 - ☐ C Cocaine
 - ☐ D Methamphetamine
- 62.** Which method is commonly used for the qualitative analysis of narcotic substances?
- ☐ A UV Spectroscopy
 - ☐ B Microscopy
 - ☒ C Chromatography
 - ☐ D Thermogravimetric Analysis
- 63.** What is the main psychoactive compound found in hallucinogenic mushrooms?
- ☐ A Mescaline
 - ☒ B Psilocybin
 - ☐ C Cathinone
 - ☐ D Codeine
- 64.** What is the primary method for the collection of narcotic drug evidence?
- ☐ A Spectroscopy
 - ☒ B Swabbing and packaging
 - ☐ C Vacuum filtration
 - ☐ D pH testing

65. Which drug is NOT classified under the NDPS Act 1985?

- ☐ A Heroin
- ☐ B MDMA
- ☒ C Alcohol
- ☐ D Morphine

66. What is the major challenge in clandestine laboratory investigations?

- ☐ A Lack of evidence
- ☒ B Presence of toxic and explosive chemicals
- ☐ C Legal hurdles
- ☐ D Unavailability of forensic labs

67. Which of the following is NOT a primary effect of narcotic drugs?

- ☐ A Sedation
- ☐ B Analgesia
- ☒ C Stimulation
- ☐ D Euphoria

68. What is the function of precursors in drug synthesis?

- ☐ A To enhance drug potency
- ☒ B To act as raw materials in drug manufacturing
- ☐ C To neutralize the drug's effects
- ☐ D To improve the drug's color

69. Which component in Gas Chromatography (GC) carries the sample through the column?

- ☐ A Stationary Phase
- ☒ B Mobile Phase
- ☐ C Detector
- ☐ D Injection Port

70. Which of the following is a hyphenated technique?

- ☒ A GC-MS
- ☐ B XRD
- ☐ C Titration
- ☐ D Flame Photometry

71. Which of the following is used as a stationary phase in Gas Chromatography?

- ☒ **A** Liquid-coated solid support
- ☐ **B** Liquid mobile phase
- ☐ **C** Helium gas
- ☐ **D** Argon gas

72. In which type of chromatography does the separation occur based on the polarity of compounds?

- ☐ **A** Ion-exchange Chromatography
- ☐ **B** Affinity Chromatography
- ☒ **C** Partition Chromatography
- ☐ **D** Paper Chromatography

73. Which type of spectroscopy is based on molecular vibrations?

- ☐ **A** UV-Visible Spectroscopy
- ☐ **B** Raman Spectroscopy
- ☒ **C** IR Spectroscopy
- ☐ **D** NMR Spectroscopy

74. What is the role of a mass spectrometer in GC-MS?

- ☐ **A** Separates components based on polarity
- ☒ **B** Ionizes and detects molecules based on their mass-to-charge ratio
- ☐ **C** Measures the absorbance of a sample
- ☐ **D** Analyzes the fluorescence of compounds

75. Which hyphenated technique is widely used for drug analysis?

- ☒ **A** LC-MS
- ☐ **B** UV-Visible Spectroscopy
- ☐ **C** Raman Spectroscopy
- ☐ **D** Thin Layer Chromatography

76. Which of the following detectors is commonly used in Gas Chromatography (GC)?

- ☐ A UV Detector
- ☒ B Flame Ionization Detector (FID)
- ☐ C Fluorescence Detector
- ☐ D Thermal Conductivity Detector (TCD)

77. Which spectroscopy technique is based on the interaction of electromagnetic radiation with nuclear spins?

- ☐ A IR Spectroscopy
- ☐ B UV-Visible Spectroscopy
- ☐ C Raman Spectroscopy
- ☒ D NMR Spectroscopy

78. What is the role of a derivatization agent in Gas Chromatography?

- ☒ A Enhances sample volatility
- ☐ B Decreases sample concentration
- ☐ C Improves sample color
- ☐ D Increases the mass of the sample

79. Which of the following techniques is best suited for analyzing metal ions in forensic samples?

- ☐ A UV-Visible Spectroscopy
- ☐ B IR Spectroscopy
- ☒ C Atomic Absorption Spectroscopy (AAS)
- ☐ D Gas Chromatography

80. Which parameter affects the resolution in HPLC separation?

- ☒ A Column length
- ☐ B Detector sensitivity
- ☐ C Injection volume
- ☐ D Temperature of the mobile phase

81. What is the main advantage of hyphenated techniques like LC-MS over traditional chromatographic techniques?

- ☐ A Faster separation
- ☒ B More accurate mass identification
- ☐ C Lower cost
- ☐ D Simpler instrumentation

82. Which of the following is a characteristic feature of Raman Spectroscopy?

- ☐ A Absorption of UV light
- ☒ B Inelastic scattering of light
- ☐ C Nuclear magnetic resonance
- ☐ D Electron excitation

83. Which factor influences the retention time in Gas Chromatography?

- ☒ A Column temperature
- ☐ B Mobile phase composition
- ☐ C Sample pH
- ☐ D Detector type

84. What does TQM stand for in quality management?

- ☐ A Total Quantity Measurement
- ☒ B Total Quality Management
- ☐ C Technical Quality Measurement
- ☐ D Test Quality Maintenance

85. Which of the following is NOT a component of Quality Control?

- ☐ A Instrument Calibration
- ☐ B Traceability
- ☒ C Sample Contamination
- ☐ D Proficiency Testing

86. Which of the following is essential for laboratory accreditation?

- ☒ **A** ISO 17025
- ☐ **B** ISO 9001
- ☐ **C** ISO 45001
- ☐ **D** ISO 14001

87. ISO 17025 applies specifically to which type of organizations?

- ☐ **A** Manufacturing Units
- ☒ **B** Testing and Calibration Laboratories
- ☐ **C** Educational Institutions
- ☐ **D** Food Processing Units

88. Which of the following best defines 'Traceability' in quality management?

- ☐ **A** The ability to trace product delivery routes
- ☒ **B** The ability to link measurements to international standards
- ☐ **C** The ability to track customer satisfaction
- ☐ **D** The ability to monitor financial transactions

89. Which of the following is NOT a key element of Quality Assurance?

- ☐ **A** Method Validation
- ☐ **B** Regular Audits
- ☒ **C** Equipment Malfunction
- ☐ **D** Personnel Training

90. What is the primary goal of proficiency testing in forensic laboratories?

- ☐ **A** Ensure employees are satisfied with their roles
- ☒ **B** Evaluate the competency of laboratory personnel
- ☐ **C** Improve marketing strategies
- ☐ **D** Reduce financial expenditure

91. Which of the following is an essential part of a Quality Audit?

- ☐ **A** Identifying new business opportunities
- ☒ **B** Reviewing compliance with standards
- ☐ **C** Measuring customer feedback
- ☐ **D** Hiring new employees

92. What does the term 'Certified Reference Material' (CRM) refer to?

- ☐ A A document certifying employee performance
- ☒ B A material with a well-defined property value used for calibration
- ☐ C A manual for training employees
- ☐ D A certification awarded to forensic experts

93. What is the purpose of a Management Review Meeting in a forensic laboratory?

- ☐ A To analyze financial growth only
- ☒ B To evaluate the effectiveness of the quality system
- ☐ C To hire new forensic analysts
- ☐ D To conduct crime scene investigations

94. In forensic science, measurement of uncertainty is important because it:

- ☐ A Helps in reducing laboratory costs
- ☒ B Assesses the reliability of test results
- ☐ C Measures employee efficiency
- ☐ D Improves court presentation skills

95. What is the purpose of method validation in forensic laboratories?

- ☒ A To verify the correctness and reliability of analytical methods
- ☐ B To document employee performance
- ☐ C To increase profit margins
- ☐ D To minimize the number of criminal cases

96. Which aspect of quality management focuses on maintaining equipment and instruments?

- ☐ A Human Resource Management
- ☒ B Equipment Calibration and Maintenance
- ☐ C Budget Allocation
- ☐ D Legal Compliance

97. Which of the following is a crucial aspect of forensic laboratory accreditation?

- ☐ A Following only local laws
- ☒ B Ensuring test methods meet international standards
- ☐ C Reducing the number of forensic cases
- ☐ D Ignoring standard operating procedures

98. What is the primary function of an internal quality audit?

- ☐ A To improve employee salary structure
- ☒ B To identify areas of non-compliance and improvement
- ☐ C To conduct criminal investigations
- ☐ D To increase laboratory funding

99. What is the purpose of a chi-square test in statistics?

- ☐ A To test for differences in means
- ☐ B To test for correlation between two numerical variables
- ☐ C To predict future values
- ☒ D To measure relationships between categorical variables

100. Which of the following is NOT a primary effect of narcotic drugs?

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