PREVIOUS YEAR PAPER

DSSSB Senior Scientific Assistant (Chemistry) 2021 — 27 September 2021, Shift 2

DSSSB Other Posts · 27 September 2021 · Shift 2

159 of the paper's 200 questions · +1 for a correct answer, −0.25 for a wrong one · 120 minutes

Left out of the original paper: 41 (any question that needs a figure, a symbol or formatting we cannot show, or whose text did not read back cleanly from the booklet).

Questions from the Delhi Subordinate Services Selection Board's paper of 27 September 2021, Shift 2. Each question is followed by its answer, and the answer key is repeated on the last page.

Take it as a timed practice test: exambharo.com/dsssb-other-posts/previous-year-papers/dsssb-other-posts-2021-senior-scientific-assistant-chemistry-27-sep-shift-2/

General Ability

1. A series is given with one term wrong. Select that WRONG term from the given alternatives.
PE, RG, TI, VL, XM

(a) RG
(b) TI
(c) VL
(d) XM

Answer: (c)

2. A series is given with one term missing. Select th ORRECT alternative from the given ones that will complete the series.
FVL, KYN, PBP, UER, ZHT, ?

(a) EJV
(b) DKV
(c) EKV
(d) DJU

Answer: (c)

3. In the following question, select the odd word from the given alternatives.

(a) Book
(b) Pen
(c) Pencil
(d) Stationery

Answer: (d)

4. In the following question, select the related words from the given alternatives.
March : August :: June : ?

(a) November

(b) January

(c) July

(d) October

Answer: (a)

5. In the following question, a group of letters is given. The letters of each group are related with the letters of the same group by some Logic/Rule/Relation. From the given alternatives, select a group of letters which follows the same Logic/Rule/Relation.
(NXZ, JTG, FPN)

(a) (DTS, ZPA, VLH)

(b) (JQL, FNS, BJA)

(c) (PWC, LSJ, HPQ)

(d) (MOV, IKC, EGJ)

Answer: (d)

6. In a certain code language, 'B' is written as '2', 'BAT' is written as '23'. What is the code for 'ON' in that code language?

(a) 25

(b) 27

(c) 29

(d) 30

Answer: (c)

7. In a certain code language, 'CARD' is written as '4, 2, 19, 5', 'POINT' is written as '17, 16, 10, 15, 21'. What is the code for 'FIGURE' in that code language?

(a) 6, 11, 8, 22, 20, 7

(b) 7, 10, 8, 22, 19, 6

(c) 6, 9, 7, 22, 18, 5

(d) 7, 10, 8, 23, 19, 6

Answer: (b)

8. A is the brother of B. D is the father of C. B is the daughter of F. C is the sister of A. How is F related to D?

(a) Wife

(b) Mother

(c) Brother

(d) Sister

Answer: (a)

9. Seven persons A, B, C, D, E, F and G sit in a row facing towards the north (not necessarily in the same order). Two persons sit between D and F.
Two persons sit between B and D. F sits fourth to the right of E. C sits third to the left of G. Who sits second to the left of A?

(a) B

(b) C

(c) D

(d) E

Answer: (c)

10. In the following question below are given some statements followed by some conclusions based on those statements. Taking the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusion logically follows the given statements.
Statements:
I. All S are H.
II. All J are H.
Conclusions:
I. Some S are J.
II. Some H are S.

(a) Only conclusion I follows

(b) Only conclusion II follows

(c) Both conclusion I and II follows

(d) Neither conclusion follows

Answer: (b)

11. In the following question below are given some statements followed by some conclusions based on those statements. Taking the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusion logically follows the given statements.
Statements:
I. Some D are F.
II. All F are G.
Conclusions:
I. Some D are G.
II. All D are G.
III. Some D are not G.

(a) Only conclusion I follows

(b) Only conclusion II follows

(c) Only conclusion III follows

(d) Both conclusion I and II follows

Answer: (a)

12. In the following question, four number pairs are given. The number on left side of (–) is related to the number of the right side of (–) with some Logic/Rule/Relation. Three are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.

(a) 11 – 100

(b) 13 – 144

(c) 15 – 196

(d) 19 – 400

Answer: (d)

13. In the following question, select the related number from the given alternatives.
27865 : 3360 :: 58297 : ?

(a) 7120

(b) 5040

(c) 4900

(d) 6180

Answer: (b)

15. A man starts walking towards the east and walks 5 km. He turns to the left and walks 12 km. How far is he now from the starting point?

(a) 12 km

(b) 13 km

(c) 14 km

(d) 15 km

Answer: (b)

16. Point P is 5 metre west of point Q. Point L [illegible]etre south of Point P. Point S is 36 metre north of Point L. Point T is 5 metre east of Point S.
How far and in which direction is Point Q from Point T?

(a) 25 km, North

(b) 24 km, North

(c) 25 km, South

(d) 24 km, South

Answer: (d)

General Awareness

21. Sri Soumyakeshava temple is situated in which state of India?

(a) Karnataka

(b) Tamil Nadu

(c) Kerala

(d) Rajasthan

Answer: (a)

22. Mohiniyattam is a classical dance form of Kerala. Which of the following statement is CORRECT regarding Mohiniyattam?
I. It belongs to the 'lasya' style which is feminine, tender and graceful.
II. Mohiniyattam does not lay emphasis on acting.

(a) Only I
(b) Only II
(c) Both I and II
(d) Neither I nor II

Answer: (a)

23. The difference between the borrowing and the lending rate in commercial banks is called _____.

(a) float
(b) spread
(c) revenue
(d) credit

Answer: (b)

24. Goods and Services tax in India was implemented from _____.

(a) 1st April 2015
(b) 1st July 2017
(c) 1st June 2015
(d) 1st March 2017

Answer: (b)

25. Refractive index of Ice is _____.

(a) 1.85
(b) 1.31
(c) 1.50
(d) 1.77

Answer: (b)

26. Which of the following pair of animal – group is CORRECT?
I. Jellyfish – Coelenterate
II. Spider – Mollusca

(a) Only I
(b) Only II
(c) Both I and II
(d) Neither I nor II

Answer: (a)

27. A constant force acts on an object of mass 10 kg for a duration of 4 second. It increases the object's velocity from 3 metre/second to 7 metre/second. What is the magnitude of applied force?

(a) 5 N
(b) 15 N
(c) 10 N
(d) 20 N

Answer: (c)

28. The rhythmic rise and fall of ocean water twice in a day is called _____.

(a) wave
(b) tide
(c) ocean current
(d) tsunami

Answer: (b)

29. Which of the following is NOT a rabi crops?

(a) Barley
(b) Peas
(c) Mustard
(d) Jowar

Answer: (d)

30. Who among the following was the son of Bindus[illegible]?

(a) Chandragupta
(b) Ashoka
(c) Bimbisar
(d) Mahindra

Answer: (b)

31. Aihole was the capital of _____.

(a) Chalukyas
(b) Cholas
(c) Pallavas
(d) Chandelas

Answer: (a)

32. Manimekalai was composed by _____.

(a) Sattanar
(b) Kovalan
(c) Madhuri
(d) Ilango

Answer: (a)

33. Language of administration under the Delhi Sultans was _____.
    (a) Persian
    (b) Hindi
    (c) Arabic
    (d) English
    Answer: (a)

34. Who is the author of the book “Right Under Your Nose”?
    (a) K.S. Vijayanath
    (b) R. Kaushik
    (c) R. Giridharan
    (d) Romila Thapar
    Answer: (c)

35. NISAR satellite which will be launched in 2023 is a Joint mission of _____ and _____.
    (a) ISRO; CNES
    (b) ISRO; NASA
    (c) ISRO; ESA
    (d) ISRO; DLR
    Answer: (b)

36. There are _____ schedules in Indian constitution
    (a) 12
    (b) 10
    (c) 11
    (d) 8
    Answer: (a)

37. Which of the following statement is CORRECT?
I. Part II of Indian constitution is related with citizenship.
II. Article 17 of Indian constitution is related with abolition of titles.
    (a) Only I
    (b) Only II
    (c) Both I and II
    (d) Neither I nor II
    Answer: (a)

38. Who among the following is the first Indian Woman Cricketer to score 10000 international runs?
    (a) Smriti Mandhana
    (b) Mithali Raj
    (c) Harmanpreet Kaur
    (d) Shafali Verma
    Answer: (b)

39. Which cricket stadium hosted the final of ICC Test Championship in July 2021?

(a) Lords
(b) The Ageas Bowl
(c) The Oval
(d) Old Trafford

Answer: (b)

40. Who among the following has won the French Open 2021 Women's Singles title?

(a) Barbora Krejcikova
(b) Sofia Kenin
(c) Naomi Osaka
(d) Anastasia Pavlyuchenkova

Answer: (a)

Arithmetic Ability

41. What is the value of 24 + 15 of 16 ÷ 8 of 2?

(a) 39
(b) 37
(c) 41
(d) 43

Answer: (a)

42. The sum of two numbers is 200 and their differ e is 100. What is the product of the two numbers?

(a) 10000
(b) 6000
(c) 8000
(d) 7500

Answer: (d)

43. Average of five numbers is 13. If three numbers 19, 22 and 14 are also included, then what will be the average of these eight numbers?

(a) 17
(b) 14
(c) 15
(d) 18

Answer: (c)

44. Marked price of an article is Rs. 6500 more than the cost price. After giving a discount of 70 percent, there is a profit of 60 percent. What is the selling price of this article?

(a) Rs. 3500
(b) Rs. 3200
(c) Rs. 2800
(d) Rs. 2400

Answer: (d)

45. A is 37 percent less than Y. If the value of A is 57960, then what is the value of Y?

(a) 92000
(b) 82400
(c) 79405
(d) 87500

Answer: (a)

46. A number is first increased by 60 percent and then it is decreased by 70 percent. If number becomes 1632, then what was the original number?

(a) 3250
(b) 3400
(c) 3650
(d) 3760

Answer: (b)

47. A chair is sold at a profit of 34 percent. If value of profit is Rs. 1904, then what is the selling price of the chair?

(a) Rs. 7504
(b) Rs. 8206
(c) Rs. 8808
(d) Rs. 9407

Answer: (a)

48. Cost price of a plate is thrice of the cost price of a glass. If glass is sold at a profit of 50 percent and plate is sold at a loss of 50 percent, then what will be the overall loss percentage?

(a) 42.5 percent
(b) 33.3 percent
(c) 28 percent
(d) 25 percent

Answer: (d)

49. Ratio of the income of Vikrant and Manik is 6 : 5 respectively. Income of Manik gets doubled and his income become Rs. 2800 more than the income of Vikrant. What is the income of Vikrant?

(a) Rs. 4200
(b) Rs. 3500
(c) Rs. 4100
(d) Rs. 2800

Answer: (a)

50. X : Y : Z = 5 : 9 : 12. If sum of X and Z is 85, then what is the value of Y?

(a) 35
(b) 45
(c) 50
(d) 54

Answer: (b)

51. Simple interest on a sum of Rs. 3200 is Rs. 1536 for four years. What is the rate of interest per annum?

(a) 8 percent
(b) 9 percent
(c) 10 percent
(d) 12 percent

Answer: (d)

52. Simple interest on a sum of Rs. 56000 is Rs. 21[illegible] for 'n' years at the rate of 13 percent per annum. What is the compound interest (co[illegible]ound[illegible] annually) on the same sum at the rate of 20 percent per annum for 'n' years?

(a) Rs. 40768
(b) Rs. 41524
(c) Rs. 44526
(d) Rs. 42624

Answer: (a)

53. Ravi is moving at the speed of 20 metre/second. How much time will he take to cover a distance of 360 km?

(a) 5 hours
(b) 4 hours
(c) 6 hours
(d) 8 hours

Answer: (a)

54. Mohit and Vikas are 960 metres apart from each other. Mohit and Vikas are moving towards each other at speed of 126 km/hr and 162 km/hr respectively. If they start moving at the same time, then in how much time will they meet each other?

(a) 8 seconds

(b) 12 seconds

(c) 10 seconds

(d) 14 seconds

Answer: (b)

55. Pipe A can fill a tank in 4 hours. Pipe B can empty a completely fill tank in 16 hours. If both the pipes are opened together, then in how much time will they fill this tank?

(a) 4 hours 20 minutes

(b) 5 hours 20 minutes

(c) 3 hours 30 minutes

(d) 6 hours 45 minutes

Answer: (b)

56. X and Y together can complete a work in 140 days. Y and Z together can complete the same work in 84 days. X and Z together can complete the same work in 90 days. In how much time Z alone can complete the same work?

(a) 118 days

(b) 160 days

(c) 126 days

(d) 184 days

Answer: (c)

General English

61. Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'. We can be / loved for / which we are. / No error

(a) We can be

(b) loved for

(c) which we are.

(d) No error

Answer: (c)

62. Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'. We brought participants on / our lab to perform / a variety of tasks. / No error

(a) We brought participants on

(b) our lab to perform

(c) a variety of tasks.

(d) No error

Answer: (a)

65. A sentence has been given with a blank to be filled with an appropriate word/words. Choose the CORRECT alternative.
Farmers _____ get useful resources from the government.

(a) hard

(b) hardly

(c) had

(d) hardest

Answer: (b)

66. A sentence has been given with a blank to be filled with an appropriate word. Choose the CORRECT alternative.
Being _____ in life is the best way to save money.

(a) dispel

(b) surgical

(c) economical

(d) quell

Answer: (c)

67. The question below consists of a set of labelled sentences. Out of the four options given, select the most logical order of the sentences to form a coherent paragraph.
P: Avalanches kill about 150 people a year in North America and Europe.
Q: In a slab avalanche, the mass of descending snow may reach a speed of 130 km per hour and is capable of destroying forests and small villages in its path.
R: The size of a snow avalanche can range from a small shifting of loose snow, called sluffing, to the displacement of enormous slabs of snow.
S: Most of those killed are backcountry skiers, mountaineers, and snowmobilers who accidentally trigger an avalanche and become buried in the snow.

(a) RPSQ

(b) RQPS

(c) SQRP

(d) RQSP

Answer: (b)

68. The question below consists of a set of labelled sentences. Out of the four options given, select the most logical order of the sentences to form a coherent paragraph.
P: The largest spills have released tens of millions of gallons of oil and have resulted in fouled coastlines, polluted fisheries, dead and injured wildlife, and lost tourism revenue.
Q: As a result of old and damaged equipment, extracting oil from the ground and moving it to refineries, occasionally releases oil into the environment.
R: As oil use boomed, its refined products such as gasoline and diesel came to be used to fuel automobiles, ships, and other vehicles, and a worldwide system of wells, ships, storage terminals, and pipelines grew.
S: Humans have used oil for thousands of years in medicine and weapons of war.

(a) QRSP
(b) SRQP
(c) RQPS
(d) PQRS

Answer: (b)

69. Choose the word that means the same as the given word.
Hopeless

(a) Hopeful
(b) Unlucky
(c) Minimal
(d) Timid

Answer: (b)

70. Choose the word that is opposite in meaning to given word.
Mature

(a) March
(b) Adolescent
(c) Irradiate
(d) Excel

Answer: (b)

71. In the given question, four words are given out of which one word is correctly spelt. Choose the CORRECTLY spelt word.

(a) Assembaly
(b) Assemmbly
(c) Asembly
(d) Assembly

Answer: (d)

72. In the given question, four words are given out of which one word is correctly spelt. Choose the CORRECTLY spelt word.

(a) Mortgege
(b) Mortegage
(c) Mortgage
(d) Morgage

Answer: (c)

73. In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.
To drink like a fish

(a) To be a good swimmer
(b) To drown
(c) To drink excessively
(d) To remain alive on a water diet

Answer: (c)

74. In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.
At the rate of knots

(a) Work slowly
(b) At the suggestion of
(c) To be calm
(d) Very fast

Answer: (d)

75. Choose the word that can substitute the given sentence.
A lover of mankind

(a) Malevolent
(b) Philanthropist
(c) Apostate
(d) Bigot

Answer: (b)

Discipline1

101. The two or more macromolecules mechanically-interlocked with each other to give _____.

(a) Clatherates
(b) Cyclodextrin
(c) Rotaxanes
(d) Catenanes

Answer: (d)

102. Supramolecular chemistry is defined as _____.

(a) chemical systems of discrete number of molecules

(b) inline chemistry

(c) clean chemistry

(d) chemistry of assumption

Answer: (a)

103. Cyclodextrin has a shape of _____.

(a) Saucer

(b) Truncated cone

(c) Bowl

(d) Plate

Answer: (b)

104. An indigenous use of hydrogen between di-alkyl ammonium cation and crown ether is known as _____.

(a) Hexene

(b) Phosgene

(c) Rotaxanes

(d) Dextrin

Answer: (c)

105. What is the cause for the formation of free radic

(a) Hydrogen bond formation

(b) Hetrolytic fission

(c) Homolytic fission

(d) Ionization

Answer: (c)

106. Which amongst the following is short lived and highly reactive in nature?

(a) carbocation

(b) carbanion

(c) carbene

(d) free radical

Answer: (c)

107. The most stable free radical is _____.

(a) primary

(b) secondary

(c) tertiary

(d) methyl

Answer: (c)

108. The geometry of carbocation is _____.

(a) Tetrahedral

(b) Trigonal Planar

(c) Linear

(d) Square Planar

Answer: (b)

111. The Lanthanide which is acting as a strong oxidising reagent is _____.

(a) Eu(2+)

(b) Ce(4+)

(c) Ce(2+)

(d) Eu(3+)

Answer: (b)

112. The d-block element in 3d series having only one oxidation state is _____.

(a) Zn

(b) Sc

(c) Ti

(d) Cu

Answer: (a)

113. Which amongst the following is NOT the transitio ement?

(a) V

(b) Cr

(c) Mn

(d) Zn

Answer: (d)

114. What is the value of Bohr Magneton for Mn in divalent state?

(a) 3.87 BM

(b) 4.90 BM

(c) 5.92 BM

(d) 2.37 BM

Answer: (c)

115. In UV-visible spectroscopy the shift of absorption to a longer wavelength due to the substitution effect is known as _____.

(a) Chromophore

(b) Auxochrome

(c) Bathochromic shift

(d) Hypsochromic shift

Answer: (c)

116. A group of organic species which is responsible for the electronic absorption is known as _____.

(a) Auxochrome
(b) Hyperchromic effect
(c) Hypochromic effect
(d) Chromophore

Answer: (d)

117. What is the base value for the maximum wavelength in the Homoannular Diene?

(a) 253 nm
(b) 214 nm
(c) 263 nm
(d) 268 nm

Answer: (a)

118. In the calculation of Homo or Hetro annular diene, the increment for ring residue is observed by _____.

(a) 5 nm
(b) 30 nm
(c) 60 nm
(d) 25 nm

Answer: (a)

119. The highest chemical shift value in the proton N[illegible] spectroscopy is observed for _____.

(a) Aldehyde
(b) Alcohol
(c) Carboxylic acid
(d) Ketone

Answer: (c)

120. What is the time taken to complete 99.9% of a first order reaction, if half-life of the reaction is 30 mins?

(a) 300 min
(b) 90 min
(c) 60 min
(d) 240 min

Answer: (a)

Discipline2

121. What is the expression for the Half-life of first order reaction?

(a) k/2.303
(b) 2.303k
(c) 0.693/k
(d) 0.693k

Answer: (c)

123. The metal present in carbonic anhydrase is _____.

(a) Mn
(b) Fe
(c) Zn
(d) Mg

Answer: (c)

124. What is the role of myoglobin in the body?

(a) Depose of CO 2
(b) Maintains pressure
(c) Transfer electron
(d) Store oxygen

Answer: (d)

125. Which amongst the following is the non-heme pr n?

(a) Hemocyanin
(b) Cytochrome c
(c) Hemoglobin
(d) Myoglobin

Answer: (a)

126. What is the range of wavelength for vacuum UV?

(a) 150-250 nm
(b) 200-300 nm
(c) 100-200 nm
(d) 200-350 nm

Answer: (c)

127. The emission of electron from S to S state in light form is known as _____.
1 0

(a) Excitation
(b) Vibrational relaxation
(c) Internal Conversion
(d) Fluorescence

Answer: (d)

128. The emission of electrons from the higher excited state to lower excited state in the form of heat in the Jablonski diagram is _____.

(a) Internal Conversion
(b) Excitation
(c) Intersystem crossing
(d) Phosphorescence

Answer: (a)

129. What is the energy of the photon?

(a) E = hc
(b) E = hv
(c) E = h/mv
(d) E = h/λ

Answer: (b)

130. Why single crystal X-ray diffraction is done for unknown crystals?

(a) To find flaws
(b) To understand the shape
(c) To determine Bond Length
(d) To remove stress

Answer: (c)

131. The advantage of Neutron diffraction over X-ray fraction is in its _____.

(a) less energy loss
(b) area of focus
(c) stress level
(d) penetration power

Answer: (d)

132. What is the selection rule for the rotational spectra of diatomic molecules?

(a) ΔJ = +1 or –1
(b) ΔJ = 0
(c) ΔJ = 1
(d) ΔJ = 2

Answer: (a)

133. Degeneracy for diatomic molecule in rotational energy level is _____.

(a) 2J – 1
(b) 0
(c) 2J + 1
(d) 2J

Answer: (c)

134. The determination of risk based on descriptive and mechanistic studies and developing safety regulations is called _____.

(a) Regulatory Toxicology

(b) Descriptive Toxicology

(c) Clinical Toxicology

(d) Mechanistic Toxicology

Answer: (a)

135. Toxicology is used to:
1. Study harmful effects of chemical and physical agents on organisms 2. Assess the probability of hazards by adverse effects 3. Predict effects on individuals, populations and ecosystems

(a) 1 and 2

(b) 2 and 3

(c) 1 and 3

(d) All 1, 2 and 3

Answer: (d)

136. Which of the following is/are related to Classical Toxicology? a. Whole animal studies
b. In-vitro/vivo models
c. Gene environment interactions

(a) Only b

(b) Only a

(c) Only c

(d) All a, b and c

Answer: (b)

137. Which of the following are primary routes of exposure?
1. Dermal
2. Respiratory
3. Dental
4. Gastrointestinal

(a) 1, 2 and 3

(b) 2, 3 and 4

(c) 1, 2 and 4

(d) 1, 3 and 4

Answer: (c)

138. Which of the following is NOT related to ADMET studies?

(a) Absorption

(b) Metabolism

(c) Elimination

(d) Division

Answer: (d)

139. Which of the following is TRUE about Bioaccumulation?
a. Accumulation of substances, such as pesticides or organic chemicals in an organism or part of an organism b. Biological sequestering through intestines and skin contact

(a) Both a and b
(b) Only b
(c) Only a
(d) Neither a nor b

Answer: (c)

140. 95% of the xenobiotic is lost in _____

(a) 4.32 half-lives
(b) 1.00 half-lives
(c) 6.64 half-lives
(d) 3.32 half-lives

Answer: (a)

Discipline3

141. The [Isopropanol + CCl4] is what type of a chemical interaction?

(a) Antagonism
(b) Potentiation
(c) Additive
(d) Synergistic

Answer: (b)

142. Which statement is/are TRUE for Disposi[illegible]ntagonism? a. chemical reaction between two compounds that produces a less toxic product b. it alters A, D, M or E to that concentration or duration at which target site is diminished c. one of its example is epinephrine diazepam.

(a) Only b
(b) Only c
(c) Only a
(d) Both b and c

Answer: (a)

143. Which of the following is/are endogenous substrate in Glucuronidation, a phase II reaction?
1. Thyroxine
2. Bilirubin
3. Serotonin
4. Catecholamines

(a) 1, 2 and 3
(b) 2, 3 and 4
(c) 1. 2 and 4
(d) All 1, 2, 3 and 4

Answer: (c)

144. Metal toxicity depends on: a. route of exposure b. duration of exposure c. absorbed dosage

(a) Only a

(b) Only b

(c) Only c

(d) All a, b and c

Answer: (d)

145. Which of the following are sources of lead in the environment?
1. Paint
2. Soil wastes

(a) Only 1

(b) Only 2

(c) Both 1 and 2

(d) Neither 1 nor 2

Answer: (c)

146. Which of the following is NOT true about Cadmium toxicity?

(a) Interacts with iron and decreases the hemoglobin and hematocrit concentration, leads to anemia

(b) Interacts with calcium, leads to osteoporosis, hypercalciuria etc.

(c) Deceases copper concentration in liver and plasma and also reduces the concentration of ceruloplasmin in plasma.

(d) It distributes iron metabolism and replaces iron present in metallothionein.

Answer: (d)

147. _____ are chemical compounds that enter the body of organisms such as pests through inhalation and affect their bloodstream, enzymes and nervous systems.

(a) Fumigants

(b) Herbicides

(c) Fungicides

(d) Insecticides

Answer: (a)

148. Chitin synthesis inhibitors fall under which group of insecticides?

(a) Nerve targets

(b) Growth and development targets

(c) Energy production targets

(d) Muscle targets

Answer: (b)

149. Herbicides can be classified as: a. Photosynthesis Inhibitors b. Growth Regulators c. Carbamic and thiocarbamide derivatives

(a) Both a and c
(b) Both b and c
(c) Both a and b
(d) All a, b and c

Answer: (c)

150. _____ is listed as 'reasonably anticipated to be a human carcinogen'.

(a) Bisphenol A
(b) Lead
(c) Arsenic
(d) Mercury

Answer: (b)

151. Phthalates are commonly used in:
1. cosmetics
2. water supply pipes 3. soap and shampoo 4. shower curtains

(a) 1, 2, 3 and 4
(b) 1, 2 and 3
(c) 2, 3 and 4
(d) 1, 3, and 4

Answer: (d)

152. The characteristics of Prokaryotes is/a
1. presence of DNA as a single circular molec ivide by binary fission
3. membrane enclosed subcellular organelles

(a) Both 1 and 3
(b) Both 1 and 2
(c) Both 2 and 3
(d) All 1, 2, and 3

Answer: (b)

153. Which of the following is a step of solid phase Extraction?
1. Retention
2. Elution
3. Conditioning

(a) Only 1
(b) Only 2
(c) Both 1 and 2
(d) All 1, 2 and 3

Answer: (d)

154. Which of the following is NOT a similarity between P and E cells?

(a) Both have mucilaginous capsule

(b) Both have ribosomes

(c) Both have a cell membrane

(d) Both have a cytosol

Answer: (a)

155. Features of Glycogen are:
a. Mainly found in muscle and liver cells in animals and humans. b. It is a large, branched polysaccharide that is main storage of glucose. c. It is not present in red blood cells, white blood or kidney cells.

(a) Both a and c

(b) Both b and c

(c) All a, b and c

(d) Both a and b

Answer: (d)

156. The amino acid-Glycine belongs to which amino acid class?

(a) Uncharged polar

(b) Acidic

(c) Non-polar

(d) Basic

Answer: (c)

157. Functions of membrane proteins:
1. Cell recognition
2. Transport
3. Receptor sites

(a) All 1, 2 and 3

(b) Only 1

(c) Only 3

(d) Both 1 and 3

Answer: (a)

158. Skin, hair, nails, sweat glands and sebaceous glands are a part of which biological system?

(a) Endocrine system

(b) Integumentary system

(c) Circulatory system

(d) Musculoskeletal system

Answer: (b)

159. Features of lysosomes:
1. membranous sacs contains oxidative enzymes 2. digest cellular debris and substances like old organelles, bacteria etc.

(a) Only 1
(b) Both 1 and 2
(c) Only 2
(d) Neither 1 nor 2

Answer: (c)

160. Characteristics of inhibitory synapse are: a. opens channels for K+ or Cl– b. results in small depolarization called EPSP c. movement of K+ (out), or Cl– (in).

(a) Both a and b
(b) Both a and c
(c) Both b and c
(d) All a, b and c

Answer: (b)

Discipline4

161. Which of the given combinations of types of receptors and the things to which they respond is/ are correctly paired?
1. Nociceptors - Tissue damage or distortion
2. Osmoreceptors - Mechanical stimuli
3. Chemoreceptors - Chemicals

(a) Both 1 and 3
(b) Both 1 and 2
(c) Only 3
(d) Only 1

Answer: (a)

162. Which of the following organic solvents is NOT recognized as a reproductive hazard?

(a) 2-methoxyethanol
(b) Methyl chloride
(c) n-hexane
(d) 2-ethoxyethanol

Answer: (c)

163. Features included in the MSDS sheet for organic solvents is/are: i. first-aid measures
ii. chemical stability and reactivity data iii. regulatory information i.e., federal and state regulation

(a) Only i
(b) Only iii
(c) Both i and iii
(d) i, ii, and iii

Answer: (d)

164. Which of the following is NOT true for Toluene toxicity?

(a) Liver damage has been reported in solvent abusers.

(b) Chronic toluene exposures at less than 100 ppm are associated with fatigue, nausea and headache.

(c) Long term exposure causes nausea, drowsiness and cardiac arrhythmia.

(d) Can cause elevated anion gap metabolic toxicity.

Answer: (b)

165. Which of the following is/are TRUE about Threshold Limit Values?
1. TLV-STEL- defined as a 15-minute time-weighted average exposure 2. TLV-TWA - defined as time-weighted concentration for a normal 6-hour workday and a 40-hour workweek

(a) Only 1

(b) Only 2

(c) Both 1 and 2

(d) Neither 1 nor 2

Answer: (a)

166. Which of the following is NOT related to chronic exposure?

(a) Exposure to lead compounds

(b) Exposure to paint sprays

(c) Gassing accidents, e.g., chlorine, nitric oxide etc.

(d) Fume from welding operations

Answer: (c)

167. The stiffening of the joints within hours after death is referred to as _____ .

(a) Algor mortis

(b) Livor mortis

(c) Rigor mortis

(d) Pallor Mortis

Answer: (c)

168. If someone dies and the body is left outside in cold weather, the rate of body cooling _____.

(a) increases slightly

(b) slows down

(c) remains same

(d) increases significantly

Answer: (b)

169. _____ is cooling of the body after death.

(a) Algor mortis

(b) Livor mortis

(c) Rigor mortis

(d) Pallor Mortis

Answer: (a)

170. Which of the following would help in the estimation of PMI if a body were discovered several days after death?

(a) Skin color
(b) Rigor Mortis
(c) Insect activity
(d) Color of eyes

Answer: (c)

171. Heroin has a half-life of _____ minutes.

(a) 15
(b) 20 to 30
(c) 3
(d) 60 to 90

Answer: (c)

172. _____ is the active ingredient of Marijuana.

(a) LSD
(b) Morphine
(c) GHB
(d) THC

Answer: (d)

173. BAC used to express the level of alcohol in bloo known as _____.

(a) Blood Alcohol Concentration
(b) Blood Alcohol Composition
(c) Blood Alcoholic Content
(d) Blood Alcoholic Component

Answer: (a)

174. The primary metabolite of heroine is _____.

(a) Morphine
(b) Cocaine
(c) THC
(d) Isopropanol

Answer: (a)

175. What level of BAC is known as LD ?
50

(a) 0.08
(b) 0.12
(c) 0.15
(d) 0.40

Answer: (d)

177. Aliphatic polyisocyanate is a component of which of the following?

(a) Activator

(b) Clearcoats

(c) Thinners

(d) Basecoats

Answer: (a)

178. Which of the following is/are used for coating woods to protect them?
I) Stain
II) Varnish
III) Shellac

(a) I and II Only

(b) I and III Only

(c) II and III Only

(d) I, II and III

Answer: (c)

179. The phenomenon, whereby someone exhibits magnified effects from a combination of drugs, is called _____.

(a) Synchronism

(b) Synergism

(c) drug coupling

(d) drug correlation

Answer: (b)

180. Which of the following drugs is/are know[illegible]nibit reverse tolerance?
I) Methamphetamine
II) Marijuana
III) LSD

(a) I and II

(b) I and III

(c) II and III

(d) I, II & III

Answer: (c)

Discipline5

181. A 100-proof whisky contains _____ percent alcohol by volume.

(a) 10

(b) 25

(c) 40

(d) 50

Answer: (d)

182. Which of the following are recommended as surrogates for measuring alcohol levels in the brain?
I) Breath
II) Blood
III) Urine

(a) I and II Only
(b) I Only
(c) II and III Only
(d) I, II and III

Answer: (a)

183. Which of the following is NOT included in field sobriety testing program?

(a) Walk and turn
(b) Stand on one foot
(c) Raise hands parallel to ground
(d) Horizontal gaze nystagmus

Answer: (c)

184. Which of the following is/are major duties of a forensic pathologist?
I) To determine the apparent cause of death II) To ascertain the manner of death
III) To determine the identity of the deceased

(a) I and II Only
(b) I and III Only
(c) II and III Only
(d) I, II and III

Answer: (d)

185. Which of the following is NOT a component of float glass?

(a) Na CO 2 3
(b) CaO
(c) Boron
(d) SiO 2

Answer: (c)

186. _____ is a method of recovery of accelerant vapors from fire debris that employs a material that adsorbs the vapors, which are then removed and concentrated for analysis.

(a) Adsorption–elution
(b) Greiss test
(c) Spalling
(d) Spluttering

Answer: (a)

187. From the standpoint of the fire scene investigator, which of the following is NOT a cause of fire?

(a) Natural

(b) Incidental

(c) Accidental

(d) Deliberate

Answer: (b)

189. _____ is a type of electron microscopy that uses thin sections of specimens that the electron beam can penetrate.

(a) Transmission electron microscopy

(b) Scanning electron microscopy

(c) Transmission light microscopy

(d) Microspectrophotometry

Answer: (a)

190. Scanning electron microscopy is used in the analysis of which of the following types of evidence?

(a) Dust

(b) Gunshot residue

(c) Glass

(d) Bullets and cartridges

Answer: (b)

191. Which of the following is/are modification of th asic compound microscope?
I) Comparison microscope
II) Polarized light microscope
III) Microspectrophotometer

(a) I Only

(b) III Only

(c) I and III Only

(d) I, II & III

Answer: (d)

192. Three-dimensional footwear impressions can be preserved by _____.

(a) Tracing

(b) Forging

(c) Casting

(d) Modeling

Answer: (c)

193. Safety precautions are NOT needed in which of the following fingerprint visualization methods?

(a) Ninhydrin

(b) DFO

(c) Super Glue fuming

(d) Physical Developer

Answer: (b)

194. To get the primary classification in Henry classification, the values of all of the even numbered boxes containing whorls are _____

(a) added together and then 1 is added to the total.

(b) multiplied together and then 1 is added to the total.

(c) added together and then 1 is subtracted from the total.

(d) multiplied together and then 1 is subtracted from the total.

Answer: (a)

195. Which of the following is/are the major fingerprint pattern types?
I) Whorl
II) Arch
III) Loop

(a) I and II Only

(b) I and III Only

(c) I Only

(d) I, II and III

Answer: (d)

196. Which of the following is NOT a whorl pa.

(a) Central pocket loop

(b) Tented

(c) Double loop

(d) Accidental

Answer: (b)

197. Whorl patterns make up around _____ percent of fingerprints.

(a) 30

(b) 70

(c) 5

(d) 20

Answer: (a)

198. The Magistrate Inquest is NOT conducted in which of the following circumstance?

(a) Death due to a disease

(b) Death in police custody

(c) Death in a psychiatric hospital

(d) Dowry deaths

Answer: (a)

199. The phenomenon of Suspended Animation is seen in: a. Hypothermia
b. Newborn

(a) Only a

(b) Only b

(c) Neither a nor b

(d) Both a and b

Answer: (d)

200. The modes of death is/are:
1. Syncope
2. Anoxia
3. Auscultation

(a) Both 1 and 2

(b) Both 2 and 3

(c) Both 1 and 3

(d) Either 1 or 2

Answer: (a)

Answer key

Answer key from the Delhi Subordinate Services Selection Board's official answer key for this sitting. "—" means the key gave none.

General Ability

1	**(c)**	2	**(c)**	3	**(d)**	4	**(a)**	5	**(d)**	6	**(c)**	7	**(b)**	8	**(a)**
9	**(c)**	10	**(b)**	11	**(a)**	12	**(d)**	13	**(b)**	15	**(b)**	16	**(d)**		

General Awareness

21	**(a)**	22	**(a)**	23	**(b)**	24	**(b)**	25	**(b)**	26	**(a)**	27	**(c)**	28	**(b)**
29	**(d)**	30	**(b)**	31	**(a)**	32	**(a)**	33	**(a)**	34	**(c)**	35	**(b)**	36	**(a)**
37	**(a)**	38	**(b)**	39	**(b)**	40	**(a)**								

Arithmetic Ability

41	**(a)**	42	**(d)**	43	**(c)**	44	**(d)**	45	**(a)**	46	**(b)**	47	**(a)**	48	**(d)**
49	**(a)**	50	**(b)**	51	**(d)**	52	**(a)**	53	**(a)**	54	**(b)**	55	**(b)**	56	**(c)**

General English

61	**(c)**	62	**(a)**	65	**(b)**	66	**(c)**	67	**(b)**	68	**(b)**	69	**(b)**	70	**(b)**
71	**(d)**	72	**(c)**	73	**(c)**	74	**(d)**	75	**(b)**						

Discipline1

101	**(d)**	102	**(a)**	103	**(b)**	104	**(c)**	[illegible]	**(c)**	106	**(c)**	107	**(c)**	108	**(b)**
111	**(b)**	112	**(a)**	113	**(d)**	114	[illegible]	5	**(c)**	116	**(d)**	117	**(a)**	118	**(a)**
119	**(c)**	120	**(a)**												

Discipline2

121	**(c)**	123	**(c)**	124	**(d)**	125	**(a)**	126	**(c)**	127	**(d)**	128	**(a)**	129	**(b)**
130	**(c)**	131	**(d)**	132	**(a)**	133	**(c)**	134	**(a)**	135	**(d)**	136	**(b)**	137	**(c)**
138	**(d)**	139	**(c)**	140	**(a)**										

Discipline3

141	**(b)**	142	**(a)**	143	**(c)**	144	**(d)**	145	**(c)**	146	**(d)**	147	**(a)**	148	**(b)**
149	**(c)**	150	**(b)**	151	**(d)**	152	**(b)**	153	**(d)**	154	**(a)**	155	**(d)**	156	**(c)**
157	**(a)**	158	**(b)**	159	**(c)**	160	**(b)**								

Discipline4

161	**(a)**	162	**(c)**	163	**(d)**	164	**(b)**	165	**(a)**	166	**(c)**	167	**(c)**	168	**(b)**
169	**(a)**	170	**(c)**	171	**(c)**	172	**(d)**	173	**(a)**	174	**(a)**	175	**(d)**	177	**(a)**
178	**(c)**	179	**(b)**	180	**(c)**										

Discipline5

181	**(d)**	182	**(a)**	183	**(c)**	184	**(d)**	185	**(c)**	186	**(a)**	187	**(b)**	189	**(a)**
190	**(b)**	191	**(d)**	192	**(c)**	193	**(b)**	194	**(a)**	195	**(d)**	196	**(b)**	197	**(a)**
198	**(a)**	199	**(d)**	200	**(a)**										