PREVIOUS YEAR PAPER

DSSSB Scientific Assistant (Chemistry) 2021 — 25 September 2021, Shift 3

DSSSB Other Posts · 25 September 2021 · Shift 3

158 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: 42 (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 25 September 2021, Shift 3. 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-scientific-assistant-chemistry-25-sep-shift-3/

General Ability

1. Find the wrong term in the letter-cluster series given below:
EPMZ, YJGT, SDAN, MXVH, GROB

(a) YJGT
(b) SDAN
(c) MXVH
(d) GROB

Answer: (c)

2. Find the missing term in the following letter-cluster series given below:
C12R, J20Y, ? , X36M, E44T

(a) P28F
(b) Q28G
(c) P28E
(d) Q28F

Answer: (d)

3. Select the letter triad from the given options which follows the same relation as shown below.
(SVW, XAB, CFG)

(a) EQM, HLO, MEQ
(b) YRQ, DWU, ICA
(c) IYQ, MPL, SQX
(d) ORS, TWX, YBC

Answer: (d)

4. Select the related word pair from the given alternatives.
Mississippi : USA : : ?

(a) Volga : Russia

(b) Amazon : USA

(c) Congo : brazil

(d) Niger : China

Answer: (a)

5. If PERSONAL is written as QDTQRKEH in certain code, how is BOARDING written in that code?

(a) CNCQFFSC

(b) CMCQGFRC

(c) CNCPGFRC

(d) CNPPJFRC

Answer: (c)

6. There are five bags kept in a shelf having different weights. Bag P is the heaviest whereas bag T is the lightest. Bag Q is heavier than bag S and R. Bag R is heavier than only one bag.
Which of the following statements is correct?

(a) Number of bags heavier than S is equal to number of bags lighter than S.

(b) Two bags are heavier than bag R.

(c) Bag Q is heavier than four bags

(d) Bag S is heavier than three bags

Answer: (a)

7. In a row at a bus stop, 'A' is 7th from the l[illegible]and [illegible]s 9th from the right. They both interchange their positions. Now A becomes 11th from the [illegible]ow many people are there in the row?

(a) 10

(b) 20

(c) 19

(d) 18

Answer: (c)

8. Two statements are followed by two conclusions numbered I and II. You have to consider these statements to be true, even if they seem to be at variance with commonly known facts. Decide which of the given conclusions logically follow/s from the given statement.
Statement:
Some houses are office.
Some office are not shop.
Conclusions:
(I) Some shops are office.
(II) Atleast some house are shop.

(a) If only I conclusion follow

(b) If only II conclusion follows

(c) If both I and II conclusions follow

(d) If neither I nor II conclusions follows

Answer: (d)

9. Three statements are followed by two conclusions numbered I and II. You have to consider these statements to be true, even if they seem to be at variance with commonly known facts. Decide which of the given conclusions logically follow/s from the given statement.
Statement:
All photos are notebook.
Some notebooks are bottles.
All bottles are boxes.
Conclusions:
(I) Some notebook are boxes.
(II) Some photos are bottles.

(a) If only I conclusion follow

(b) If only II conclusion follows

(c) If both I and II conclusions follow

(d) If neither I nor II conclusions follows

Answer: (a)

10. Three statements are followed by three conclusions numbered I, II and III. You have to consider these statements to be true, even if they seem to be at variance with commonly known facts. Decide which of the given conclusions logically follow/s from the given statement.
Statement:
Few coffee is tea.
Some tea are juice
All juice are glasses.
Conclusions:
(I) Some tea are glasses.
(II) Some juices are glasses.
(III) Some glasses are coffee.

(a) If only I conclusion follow

(b) If only II conclusion follows

(c) only I and II conclusions follow

(d) If only III conclusions follows

Answer: (c)

11. Find the next term in the series.
10, 15, 25, 35, 55, ?

(a) 65

(b) 59

(c) 55

(d) 81

Answer: (a)

12. The given statements are followed by two conclusions. Mark the appropriate answer.
Statement:
$B \leq A$, $B > C$, $D > C$, $E < D$
Conclusions:
I. $A > C$
II. $B < D$

(a) Only conclusion I follows
(b) Only conclusion II follows
(c) Both conclusions I and II follow
(d) Neither conclusion I nor II follows

Answer: (a)

13. Which two signs should be interchanged to make the following equation correct?
$24 \div 12 - 6 \times 6 + 2 = 18$

(a) + and ÷
(b) ÷ and ×
(c) + and –
(d) × and +

Answer: (a)

General Awareness

21. Which among the following are wind instrument?

(a) Avanaddha Vadya
(b) Tat Vadya
(c) Ghan Vadya
(d) Sushir Vadya

Answer: (d)

22. Sagara Sambaralu is a music festival held in which of the following states?

(a) Andhra Pradesh
(b) Orissa
(c) Gujarat
(d) Arunachal Pradesh

Answer: (a)

23. The food procured by the Food Corporation of India is distributed through government regulated ration shops among the poorer section of the society. This system is known as-

(a) Food Distribution System
(b) Food Security System
(c) Minimum Support Price
(d) Public Distribution System

Answer: (d)

24. Under the Union Budget, 2021, the Government has proposed Liquid Waste management in how many AMRUT Cities?

(a) 200
(b) 250
(c) 400
(d) 500

Answer: (d)

25. Human Development Report compares countries based on certain indicators. Which of the following is not one of such indicators?

(a) Per Capita Income
(b) Educational Level
(c) Health Status
(d) Infant Mortality

Answer: (d)

26. What is the atomic number of Phosphorous?

(a) 15
(b) 20
(c) 16
(d) 18

Answer: (a)

27. A lightning conductor is made of which of the fo wing?

(a) Metal
(b) Non-Metal
(c) Metalloid
(d) Gas

Answer: (a)

28. As of December 2020, which of the following is the wettest place on Earth?

(a) Mawsynram, India
(b) Cropp River, New Zealand
(c) Tutunendo, Colombia
(d) Debundscha, Cameroon

Answer: (a)

29. Sardar Sarovar Dam has been built over which of the following rivers?

(a) Narmada River
(b) Tapti River
(c) Satluj River
(d) Yamuna River

Answer: (a)

30. Which poet composed a biography of the Buddha, the Buddha Charita?
(a) Ashvaghosha
(b) Kanishka
(c) Muvender
(d) Bodhisattva
Answer: (a)

31. Battle of Khanwa was fought between Babur and whom among the following?
(a) Ibrahim Lodhi
(b) Sher Shah Suri
(c) Rana Sanga
(d) Maharana Pratap
Answer: (c)

32. Shah Jahan ruled India during-
(a) 1530 – 1556
(b) 1556 – 1605
(c) 1605 – 1626
(d) 1627 – 1658
Answer: (d)

33. May 2021, Guillermo Lasso has become the Presi t of which of the following countries?
(a) Cuba
(b) Ecuador
(c) Georgia
(d) Italy
Answer: (b)

34. Which of the following states was ranked as the top performing state under India Smart Cities Award Contest 2020?
(a) Kerala
(b) Maharashta
(c) Bihar
(d) Uttar Pradesh
Answer: (d)

35. Which of the following state government announced Rs. 4 crores to Olympic silver medal winner Ravi Kumar Dahiya?
(a) Odisha
(b) Jharkhand
(c) Punjab
(d) Haryana
Answer: (d)

36. In collaboration with which of the following companies, CBSE has introduced coding as a subject for students?

(a) Google
(b) Microsoft
(c) TCS
(d) Infosys

Answer: (b)

37. Under which article of the Constitution of India does the Governor of a State have the Power to grant Pardon?

(a) Article 72
(b) Article 75
(c) Article 161
(d) Article 165

Answer: (c)

38. The Election Commission of India is a Constitutional Body under which of the following articles of the Constitution of India?

(a) Article 365
(b) Article 370
(c) Article 324
(d) Article 360

Answer: (c)

39. Indian National Congress session of 19[illegible]as [illegible]d in which of the following cities?

(a) Lahore
(b) Karachi
(c) Lucknow
(d) Mumbai

Answer: (b)

40. Where was the IXth Asian Games held?

(a) Hyderabad
(b) Chennai
(c) Calcutta
(d) New Delhi

Answer: (d)

Arithmetic Ability

45. There are total 26 students in a class. Piyush was assigned a task to calculate the average marks of first 25 students according to their roll numbers, but by mistake he calculated the average marks of all 26 students due to which the average marks increased by 1. If the 26th student got 90 marks then find the average marks of the first 25 students.

(a) 66 marks
(b) 64 marks
(c) 62 marks
(d) 65 marks

Answer: (b)

46. In a sports club, every person plays either polo or Table Tennis or both. 74 percent person plays Polo and 44 percent plays table tennis. If there are 252 persons who plays polo and table tennis both, find total number of person in the club.

(a) 1200
(b) 1400
(c) 1500
(d) 2100

Answer: (b)

47. A speaks truth in 60 percent cases and B speaks truth in 80 percent cases. The probability that they will say the same thing while describing a single event is:

(a) 0.36
(b) 0.56
(c) 0.48
(d) 0.20

Answer: (b)

48. Which of the following is the greatest among all?

(a) 12 percent discount on marked price Rs. 240
(b) 10 percent discount on marked price Rs. 320
(c) 8 percent discount on marked price Rs. 400
(d) 7 percent discount on marked price Rs. 500

Answer: (d)

50. Ratio of ages of A and B is 6 : 5. What can be the ratio of ages of A & B, 15 years from now?

(a) 5 : 4
(b) 6 : 5
(c) 7 : 6
(d) 7 : 5

Answer: (c)

51. A person has some coins of Rs.10, Rs.5 and Rs.2. The ratio of the products of the number of coins of Rs.10 and Rs.5, Rs.5 and Rs.2, Rs.2 and Rs.10 is 3 : 4 : 2 respectively. What could be the minimum amount he has?

(a) Rs.74

(b) Rs.68

(c) Rs.52

(d) Rs.88

Answer: (b)

52. A sum of Rs.1920 is lent partly at 5 percent and partly at 8 percent compound interest per annum. If Rs.186 is earned at the end of one year as interest then ratio of the amount put on at 5 percent rate and 8 percent rate is:

(a) 5 : 8

(b) 8 : 5

(c) 9 : 7

(d) 16 : 15

Answer: (c)

53. Two aircrafts are moving towards each other at different speeds of 60 m/s and 75 m/s. If the distance between the aircrafts is 54 km, then find out the time taken by the aircrafts to cross each other, assuming the length of the aircrafts is negligible.

(a) 5 minutes 36 seconds

(b) 6 minutes 24 seconds

(c) 5 minutes 30 seconds

(d) 6 minutes 40 seconds

Answer: (d)

55. A takes 40 percent more time than B to finish a work. Together they can complete the work in 10 days. If B starts the work & leaves after 5 days, in how many days A would finish the remaining work ?

(a) 13

(b) 15

(c) 17

(d) 19

Answer: (c)

56. A man is 60 percent more efficient than a woman and a boy is 75 percent as efficient as a man. If 4 boys and 9 women can complete a work in 8 days by working together, then in how many days (approx) 3 men can do the same work by working together?

(a) 23 days

(b) 22 days

(c) 26 days

(d) 29 days

Answer: (c)

58. The length, breadth and height of a gift pack are 12 cm 10 cm, and 8 cm respectively. A shopkeeper wrapped it with 2 cm wide color strip. What is the length of the color strip needed to wrap it?

(a) 296 cm

(b) 324 cm

(c) 276 cm

(d) 224 cm

Answer: (a)

General English

61. In the following question, a part of the sentence may contain an error. Identify the part that contains the error and select it as your answer. If the sentence is free from error, select 'No error'.
Despite many positive factors, the market vitality is gradually being stimulating.

(a) Despite many positive factors,

(b) the market vitality is gradually

(c) being stimulating.

(d) No error

Answer: (c)

62. In the following question, a part of the sentence may contain an error. Identify the part that contains the error and select it as your answer. If the sentence is free from error, select 'No error'.
The protest on the state highway near the village was called off temporarily.

(a) The protest on the state highway

(b) near the village was

(c) called off temporarily.

(d) No error

Answer: (d)

63. Select the most appropriate option to substitute the bracketed part in the given sentence. If there is no need to substitute the bracketed part, select 'No improvement'.
Cohen (not has been charge) in the case, but prosecutors are eyeing his business dealings

(a) being charged has not

(b) charged has not been

(c) has not been charged

(d) No improvement

Answer: (c)

65. Select the most appropriate option to fill in the blank.
He has repeatedly criticized Western churches as too _____ and too entrenched in consumerism.

(a) worldly

(b) lurched

(c) rhetoric

(d) tedious

Answer: (a)

66. Select the most appropriate option to fill in the blank.
They _____a climate emergency, but it feels that every decision that the council has made at the moment is in complete contradiction to this climate emergency.

(a) declared

(b) declares

(c) have declared

(d) are declaring

Answer: (c)

67. In the following question given below, a sentence is provided with two blanks. Choose the correct combination of words that fit into the corresponding blanks.
_____ for tests on the immuniser developed in India will serve to _____ the efficacy, safety and consistency between vaccine batches.

(a) approved, assessing

(b) approval, assess

(c) approval, assessed

(d) approved, assess

Answer: (b)

68. In the following question given below, a sentence is provided with two blanks. Choose the correct combination of words that fit into the corresponding blanks.
The first decision that has been _____ is to force multinationals to _____ taxes where they operate.

(a) ratified, pay

(b) ratify, paying

(c) ratified, pays

(d) ratifies, paying

Answer: (a)

69. The question consists of four statements labelled P, Q, R, and S, which, when logically arranged, form a coherent passage. Choose the option that represents the most logical order.
(A) However, Carol was not feeling too well to leave the room.
(B) There were many families relaxing on that Sunday afternoon.
(C) Carol looked through the window into the first-class area.
(D) Children were splashing about the pool, and many were sunbathing or snoozing on easy chairs.

(a) ADCB

(b) CDAB

(c) ACBD

(d) CBDA

Answer: (d)

70. Select the most appropriate synonym for the given word.
QUEST

(a) Path
(b) Destination
(c) Search
(d) Route

Answer: (c)

71. Select the antonym for the given word.
ABUNDANT

(a) Scarce
(b) Plentiful
(c) Copious
(d) Ample

Answer: (a)

72. Select the correctly spelt word.

(a) Distilation
(b) Distillation
(c) Destillation
(d) Destilation

Answer: (b)

73. Select the correctly spelled word.

(a) Barbequee
(b) Barbique
(c) Barbecue
(d) Barbiceu

Answer: (c)

74. In the following question, out of the four given options, select the one that best expresses the meaning of the idiom/phrase.
A passing resemblance

(a) an amusing use of a word that has more than one meaning
(b) a very unpleasant person
(c) a slightly similar appearance
(d) to think about something before making a decision

Answer: (c)

75. Select the word which means the same as the following group of words.
Written law of a legislative body

(a) Statute
(b) Stature
(c) Static
(d) Statue

Answer: (a)

Discipline1

101. Which of the following statement is correct for nucleotides in DNA?

(a) Adenine from pair with cytosine
(b) Guanine form pair with thymine
(c) Adenine form pair with thymine
(d) Cytosine form pair with thymine

Answer: (c)

102. Which among the following is one of the medico legal importance of incised wound?

(a) Determination of the age of injury was possible
(b) Abrasions on the neck of suspect can indicate struggle
(c) Suicidal incised wounds are rare
(d) Depth of wound shall signify the penetration f[illegible]e

Answer: (a)

103. Which of the following codes of profe[illegible]al [illegible]duct treat evidence for "treat evidence for what it shows not what you think it shows", reg[illegible]ss of local rules and regulations?

(a) Due diligence
(b) Objectivity
(c) Open mind
(d) Impartiality

Answer: (b)

104. Identify the equipment which is NOT necessary for processing the scene of crime?

(a) Adhesive ID maker
(b) Explosive detection kit
(c) Expression detection kit
(d) Laptop

Answer: (d)

105. In which of the following technique, high pressure is applied to the classical chromatographic columns?

(a) Gas chromatography
(b) High-performance liquid chromatography
(c) Thin layer chromatography
(d) Massspectrometry

Answer: (b)

106. The finger print pattern in which the ridge lines flow into the print from one side, rise in the middle of the pattern and flow out of the print from the other side is called as

(a) Whorls
(b) Composite
(c) Loops
(d) Arches

Answer: (d)

107. The impressions left on an object that was caused by contact with footwear are classified as

(a) Outer impressions
(b) Inner impressions
(c) Imprints impressions
(d) Other evidence from shoes

Answer: (a)

108. In which of the following method of barefoot e[illegible]ination, well recognized identification points of foot are connected with one another by [illegible]ing a[illegible]ies of measured lines?

(a) Optical center method
(b) Overlay method
(c) Gunn method
(d) Composite method

Answer: (c)

109. Identify the ridge type which is an independent ridge of relatively small length?

(a) Hook ridge
(b) Ridge ending
(c) Enclosure ridge
(d) Fragment ridge

Answer: (d)

110. “one in a population of size N”, Such a statement may be interpreted as sufficiently rare within a population. Which statistical probability distribution is used to calculate the probability of obtaining a particular pattern.

(a) Normal distribution

(b) Binomial distribution

(c) Poisson distribution

(d) Exponential distribution

Answer: (c)

111. Which of the following biological evidence’s sample can be acquired from drinking glasses, cigarette butts, envelopes, and other sources and then used to identify blood-group substances?

(a) Sperm

(b) Semen

(c) Urine

(d) Saliva

Answer: (d)

112. The reaction which is performed to identify the species of the origin of the bloodstains using turbidity and contamination free dilute blood solution is known as

(a) Benzidine reaction

(b) Precipitin reaction

(c) Leucomalachite reaction

(d) Phenolphthalein reaction

Answer: (b)

113. In tooth eruption sequence, the appearance of the deciduous second molars completes the deciduous dentition by

(a) 2 to 2.5 years of age

(b) 2.5 to 6 years of age

(c) 6 years to 12 years of age

(d) 12 years to 16 years of age

Answer: (a)

114. _____type of hallucination is the perception of taste without a stimulus which are typically strange or unpleasant, are relatively common among individuals who have certain types of focal epilepsy, especially temporal lobe epilepsy.

(a) Visual

(b) Auditory

(c) Tactile

(d) Gustatory

Answer: (d)

115. Which of the following sexual deviation involves gaining sexual pleasure from seeing others undergo discomfort or pain?

(a) Fetishism
(b) Sadism
(c) Exhibitionism
(d) Masochism

Answer: (b)

116. The techniques like electrophoresis could be used for the analysis of different

(a) Noxious chemicals
(b) Arson cases
(c) Toxins
(d) Residues of gun shots

Answer: (c)

117. The determination of arsenic in the hair of dead bodies buried that are burried for hundreds of years are made possible by

(a) Nuclear magnetic resonance spectrophotometry
(b) Gas Chromatography- Mass Spectroscopy
(c) Neutron Activation Analysis
(d) Fourier Transform Infrared Spectrophotometry

Answer: (c)

118. _____ exposure in any relative time period for which continuous or repeated exposure beyond the acute phase is required for the same chemical to induce a toxic response.

(a) Chronic
(b) Sub-Acute
(c) Acute
(d) Fulminating

Answer: (a)

119. Identify the propellant in which the active ingredient is from the family of Cyclo-tri- ethylene-triamine?

(a) Gun powder
(b) Smokeless powder
(c) Triple based
(d) RDX based

Answer: (d)

120. Which among the following wads are about 12.5 mm thick and are often greased?

(a) Cushion wads
(b) Over-powder wads
(c) Under-powder wads
(d) Over-shot wads

Answer: (a)

Discipline2

121. Which of the following chemical test for GSR identification is used for the detection of nitrites in the partially burnt and unburnt propellants?

(a) Greiss test
(b) Walker test
(c) Tewari test
(d) Marshall test

Answer: (b)

122. Which of the following factor hampers the examination of questioned documents, that refers to situations where there is not enough known writing, or the samples are inadequate, poor-quality or machine-printed and not suitable for comparison?

(a) Lack of contemporaneous writings submitted for comparison
(b) Insufficient known specimens submitted for comparison
(c) Distortion or disguised writing.
(d) Non-original evidence

Answer: (b)

123. What is minimum number of photographs that should be taken for each of the items of evidence discovered at the crime scene?

(a) 2
(b) 3
(c) 4
(d) 6

Answer: (a)

124. The records for which of the following elements is NOT necessary to keep with regard to photography of the crime scene?

(a) Items covered
(b) Positions of the camera
(c) Type of illumination used
(d) Camera satellite mapping data

Answer: (d)

125. Illegal misappropriation of anything of value including money or property that has been entrusted to the offender's care, custody or control is called

(a) Phishing
(b) Money Laundering
(c) Embezzlement
(d) Web Jacking

Answer: (c)

126. _____ is a piece of code intentionally inserted into a software system that will initiate mischievous features under definite conditions.

(a) Logic bomb
(b) Trojan horse
(c) Data diddling
(d) Salami slicing

Answer: (a)

127. Which of the following device permits the analysis and comparison of inks revealing alterations on a document as well as whole questioned document without consuming much time?

(a) Polarizing microscope
(b) Video spectral comparator
(c) Docubox dragon
(d) Voice spectrograph

Answer: (b)

128. Which of the following method is actually suitable for dissolved glasses and is a rapid and precise method?

(a) X-ray diffraction techniques
(b) Inductively coupled plasma atomic emission spectroscopy
(c) Raman spectroscopy
(d) Infrared spectroscopy

Answer: (b)

129. _____ is a technique of go around norm[illegible]cation procedures, generally over a link to a network like the Internet

(a) Backdoor
(b) Rootkits
(c) Trojan horse
(d) Diddling

Answer: (a)

130. Which of the following tests are used to discriminate between paint films of different pigment and binder composition which are already similar in visual and macroscopical appearance?

(a) Micro chemical test
(b) Vibrational spectroscopy
(c) Physical match
(d) Polarized light microscopy technique

Answer: (a)

131. Net extortion is classified as which type of following cyber crime?

(a) Criminality against states
(b) Criminality against property
(c) Criminality against organization
(d) Criminality against society

Answer: (d)

132. What type of hackers considers that information distribution is good, and that it is their responsibility to share their knowledge by enabling access to information?

(a) White hat hackers
(b) Black hat hackers
(c) Grey hat hackers
(d) Robbinhood hackers

Answer: (a)

133. The study of the human skeleton including anatomy, demographics, and pathology is known as

(a) Human biology
(b) Osteology
(c) Primatology
(d) Palaeoanthropology

Answer: (b)

134. _____contain five cylinder-shaped bones which e added up to the adjacent side and has three surfaces: medial, lateral, and dorsal.

(a) Carpals
(b) Metacarpals
(c) Phalanges
(d) Metatarsals

Answer: (b)

135. Which metal compound is used in photography?

(a) [Ag(S2O3)]
(b) [Ag(SO4)]
(c) AgCl
(d) [Ag(SO2)]

Answer: (c)

136. Which compound is used to estimate the hardness of water?

(a) Na2EDTA
(b) EDTA(Cl2)
(c) H2EDTA
(d) EDTA

Answer: (d)

137. What is the key feature of supramolecular chemistry?

(a) ability to increase number in multiples

(b) ability to regain

(c) ability to reorganize and exchange molecules

(d) ability to decrease their number

Answer: (c)

138. Which of the following scientists worked on the Stability Constants of Metal Complexes in Solution?

(a) Planck

(b) Bjerrum

(c) Chejken

(d) Murre

Answer: (b)

139. Name the reaction in which synthesis of biaryls takes place by heating aryl iodides with copper powder

(a) Ullmann reaction

(b) Gattermann reaction

(c) Kolbe's reaction

(d) Wurtz reaction

Answer: (a)

140. What is full form of "GIXD"?

(a) grasping incidence x-ray diffractior

(b) grouping incidence x-ray diffraction

(c) griping incidence x-ray diffraction

(d) grazing incidence x-ray diffraction

Answer: (d)

Discipline3

141. What will be obtained when 2-methyl -2-butane is treated with O3, CH2Cl2 (-73 degree Celcius) and Zn/HOAc

(a) Acetone + Aldehyde

(b) Butane + formaldehyde

(c) Acetone + Anhydride

(d) Acetone + Acetaldehyde4

Answer: (a)

142. Sodium ethynide and other sodium alkynides can be prepared by treating terminal alkynes with sodium amide in

(a) platinum
(b) liquid ammonia
(c) nickel
(d) liquid hydrogen

Answer: (a)

143. The spectrum of Li++ is similar to :

(a) hydrogen
(b) lithium
(c) helium
(d) boron

Answer: (a)

144. Who received Noble prize for black body radiation?

(a) Einstein
(b) Planck
(c) Maxwell
(d) Neil Bohr

Answer: (b)

145. What are the number of nodal plains in s,p and d orbital respectively?

(a) 0,1,2
(b) 2,1,0
(c) 1,1,1
(d) 2,0,2

Answer: (a)

146. What will be the probable radius (in pm) for finding the electron in Li++ ?

(a) 52.9
(b) 25.9
(c) 23.4
(d) 17.63

Answer: (d)

147. What will be formula of Energy in (eV) of a photon in vacuum? (Where λ is measured in = Å)

(a) 12375÷ wavelength
(b) 14567÷ wavelength
(c) 17657÷ wavelength
(d) 13456÷ wavelength

Answer: (a)

148. Silver is not attacked by _____

(a) sulphuric acid

(b) nitric acid

(c) aqua regia

(d) hydrochloric acid

Answer: (d)

149. Which of the two compounds are isomorphous?

(a) FeSO4.7H2O and ZnSO4.7H2O

(b) NaOH and HCl

(c) HCl and KCl

(d) ZnO and HNO3

Answer: (a)

150. Which of the following is Brown's catalyst?

(a) Nickel boride

(b) Nickel Sulphide

(c) Titanium Oxide

(d) Nickel bromide

Answer: (a)

151. What is the colour of Tm 3+ ?

(a) Yellow

(b) blue

(c) green

(d) purple

Answer: (c)

152. Which of the following is reagent in synthesis of trans-5-Methyl-2-hexene →2- methylhexane ?

(a) H2,Pd,Pt or Ni catalyst ,pressure

(b) Cl2,Ni,Pt,Pd catalyst, pressure

(c) Cu, Sn,Pt catalyst, pressure

(d) Ti,Sn,Pt catalyst ,Pressure

Answer: (a)

153. Name the intermediate obtained in the following reaction phenylmagnesium bromide + Formaldehyde → benzyl alcohol

(a) C2H5CH2 --O-Mg+Br

(b) C6H5CH2--MgBr

(c) C6H5CH2--MgCl

(d) C6H5CH2--MgI

Answer: (a)

154. What will be obtained when 2-methylpropene is reacted in the presence of nickel and ethyl alcohol?

(a) Cyclohexane
(b) Isobutane
(c) propane
(d) butane

Answer: (b)

155. Which of the following will act as catalyst in the following reaction: Cyclononyn$\rightarrow$ + 2H2$\rightarrow$ Cyclononanone

(a) pd, ethyl acetate
(b) pd, ethyl alcohol
(c) Ni, ethyl acetate
(d) Ni, ethyl alcohol

Answer: (a)

156. What will be obtained when 1- bromo-2-butanol reacts in the presence of Zn,H+ (-ZnBr2) ?

(a) 2- butanol
(b) 3- butanol
(c) 4-butanol
(d) 7-butanol

Answer: (a)

157. Which of the following is not an application of a orption?

(a) In gas masks
(b) In chromatographic analysis
(c) For dyeing
(d) in quantitative analysis

Answer: (d)

158. Which of the following reaction is fractional order?

(a) $2NO + Br_2 \rightarrow 2NOBr$
(b) $CO + Cl_2 \rightarrow COCl_2$
(c) $2HI \rightarrow H_2 + I_2$
(d) $C_2H_4 + H_2 \rightarrow C_2H_6$

Answer: (b)

159. Which of the following factor does not effect the rate of reaction?

(a) Temperature
(b) surface area
(c) molecularity
(d) Presence of light

Answer: (c)

160. Which of the following is Debye-Huckel-Onsager equation?

(a) $\wedge c = \wedge o + b\sqrt{C}$

(b) $\wedge c = \wedge o - b(C)$

(c) $\wedge c = \wedge o + bc$

(d) $\wedge c = \wedge o - b\sqrt{C}$

Answer: (d)

Discipline4

161. N H is formula of which of the given compound?
3

(a) Hydrazine

(b) Hydrazoic acid

(c) Hydroxylamine

(d) Hydrazone

Answer: (b)

162. Which of the following compound is called pearl white?

(a) BiOCl

(b) BOCl

(c) NaCl

(d) SiOCl

Answer: (a)

163. Cementite is also known as _____.

(a) Iron carbide

(b) Copper carbide

(c) magnesium carbide

(d) sulphur carbide

Answer: (a)

164. When Hypohalites disproportionate in aqueous solution on heating it produces

(a) Halohalides

(b) Halolites

(c) Halites

(d) Halates

Answer: (d)

165. Complete the reaction : $2K2MnO4 + 4KOH + O2 \rightarrow$

(a) KMnO

(b) $MnO4^-$

(c) Mn2O4

(d) Mn2SO4

Answer: (a)

166. Which of the following is not an antacid?

(a) Zantac

(b) Omeprazole

(c) Iproniazid

(d) Lansoprazole

Answer: (c)

167. Which of the following is supposed to be toxic for cancer cells?

(a) Chloramphenicol

(b) Dysidazirine

(c) Halothane

(d) Penicillin

Answer: (b)

168. Toxic agents can be classified on the basis of:
1. Target organ
2. Physical State
3. Reactivity

(a) Only 1

(b) Both 1 and 2

(c) Both 2 and 3

(d) All 1, 2 and 3

Answer: (d)

169. The chronic exposure of smoking cigarette can cause: a. nervous system stimulation
b. bone marrow damage
c. emphysema

(a) Only a

(b) Only c

(c) Both a and b

(d) Both a and c

Answer: (b)

170. Which of the following is not an example of Receptor Tolerance?

(a) Cadmium and metallothionein

(b) Nicotine in cigarettes

(c) Morphine and opioid receptors

(d) Muscarinic Ach receptors

Answer: (a)

171. The features of Teratogenicity test is/are
a. Test substance is administered to pregnant animals
b. The damage to the birth of the fetus caused by test substance is determined c. Animals with high frequency of occurrence of naturally occurring abnormalities are selected

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

Answer: (c)

172. Examples of asphyxiating gases is/are i. Argon
ii. Nitrogen
iii. butane

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

Answer: (b)

173. Who is considered as the mother of environmental toxicology?

(a) Mathieu Orfila
(b) Marie LaFarge
(c) Rachel Carson
(d) Jonathan Pereira

Answer: (c)

174. What is the color coded for the infectious waste that is required to be incinerated?

(a) Orange
(b) Purple
(c) Yellow
(d) Blue

Answer: (c)

175. What is the value of maximum dose (mg) of Lidocaine; a local anesthetic in a plain solution?

(a) 175 mg
(b) 350 mg
(c) 500 mg
(d) 250 mg

Answer: (b)

176. The different shapes of Prokaryotes is/are a. helical
b. cocci
c. bacillus

(a) Both a and b

(b) Both b and c

(c) Both a and c

(d) All a, b and c

Answer: (d)

177. The functions of membrane proteins is/are 1. Intercellular joining
2. Signal transduction

(a) Only 1

(b) Only 2

(c) Both 1 and 2

(d) Neither 1 nor 2

Answer: (c)

178. Which of the statements is/are true?
A. Hypertonic solution: solute concentration is greater than that inside of the cell and cell loses water B. Isotonic solution: solute concentration is less than that inside of the cell and cell gains water C. Hypotonic solution: solute concentration is same as that of inside the cell and no net water movement

(a) Only A

(b) Only B

(c) Only C

(d) Neither A, B nor C

Answer: (a)

179. Which of the following is true about the factors affecting diffusion rate? a. Steeper gradient results in faster diffusion b. High temperature results in faster diffusion c. Smaller molecular size results in slower diffusion

(a) Both a and c

(b) Both a and b

(c) Both b and c

(d) All a, b and c

Answer: (b)

180. Epidemiological data for hazard assessment is/are 1. less precise
2. less relevant

(a) Only 1

(b) Only 2

(c) Neither 1 nor 2

(d) Both 1 and 2

Answer: (a)

Discipline5

181. Which of the following correctly defines the Margin of exposure?
Given: LOEL - Lowest dose at which there was an observed effect BMDL - Benchmark dose level

(a) Ratio between the LOEL and the estimated human exposure

(b) Ratio between the BMDL and the estimated human exposure

(c) Ratio between either the LOEL or BMDL and the estimated human exposure

(d) Ratio between the LOEL and BMDL

Answer: (c)

182. Which of the following classes of chemicals are considered as carcinogens?
1. Hydrazines
2. Aromatic Amines
3. Epoxides

(a) Only 1

(b) Only 2

(c) Only 3

(d) All 1, 2 and 3

Answer: (d)

183. Which of the following is an example of an inorganic exogenous chemical, a carcinogenic agent?

(a) Benzene

(b) Chromium

(c) Formaldehyde

(d) Nitrosamines

Answer: (b)

184. Which of the following is/are the examples of Personal protective equipment used to reduce the carcinogen exposure? i. Biosafety cabinets
ii. Splash goggles
iii. Respirators
iv. Fume hoods

(a) Both i and ii

(b) Both iii and iv

(c) Both ii and iii

(d) Both i and iv

Answer: (c)

185. In relation to carcinogens, the records of exposure, monitoring and medical exams must be kept for how many years?

(a) 30

(b) 20

(c) 10

(d) 25

Answer: (a)

186. Which of the statements is/are true about DNA damage?
1. Clastogenesis- Results in gain, loss or rearrangement of pieces of chromosome 2. Aneuplody - Gain or loss of one or more chromosomes

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

Answer: (c)

187. The features of most useful chelators is/are a. low order of toxicity
b. can be eliminated quickly without breakdown c. can be redistributed to other organs

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

Answer: (a)

188. Which of the following properties does not hold true about Arsenic?

(a) It is extensively available in the form of oxides or sulfides
(b) It is a protoplastic poison as it affects the sulphydryl groups of cells
(c) It is the 7th most abundant element on earth
(d) Chronic arsenic toxicity causes pigmentation a keratosis

Answer: (c)

189. In how many stages does the iron toxi is or s?

(a) 3
(b) 4
(c) 5
(d) 2

Answer: (c)

190. The sources of Methyl mercury can be 1. Dental amalgams
2. Poultry
3. Fish
4. Thermometers

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

Answer: (c)

191. Which of the following is the function of Connective tissues?
1. Contracts to produce active movement 2. Helps in storing energy
3. Provides structural support

(a) Both 1 and 2

(b) Both 2 and 3

(c) All 1, 2 and 3

(d) Neither 1 nor 3

Answer: (b)

192. Which of the following organs is/are part of Endocrine system? a. Thymus
b. Rectus abdominis
c. Adrenals

(a) Only a

(b) Only b

(c) Only c

(d) All a, b and c

Answer: (c)

193. Which of the following cell structures modifies and packages proteins?

(a) Mitochondrion

(b) Golgi apparatus

(c) Ribosome

(d) Endoplasmic Reticulum

Answer: (b)

194. Which of the following cell structure is responsible for breaking down large organic compounds, damaged organelles and pathogens?

(a) Lysosome

(b) Peroxisome

(c) Microvilli

(d) Ribosome

Answer: (a)

195. Intracellular fluids are present in _____ volume of fluids in body.

(a) 1/3

(b) 1/2

(c) 1/4

(d) 2/3

Answer: (a)

196. Which of the following statements is not true about the nucleotides?

(a) Adenine binds with thymine and uracil

(b) Uracil binds with cytosine

(c) Thymine only binds with adenine

(d) Cytosine and guanine can only bind with each other

Answer: (b)

197. The functions of Fatty acids is/are 1. works as a thermal blanket
2. performs synthesis of hormones 3. supply carbon for synthesis of other compounds

(a) Both 1 and 3

(b) Both 2 and 3

(c) Both 1 and 2

(d) All 1, 2 and 3

Answer: (c)

198. Which of the following is not a characteristic of Fomepizole, a treatment option for methanol toxicity?

(a) Fairly cheap

(b) Easily dosed

(c) Does not cause inebriation

(d) Inhibits alcohol dehydrogenase

Answer: (a)

199. Which of the following is caused by the high d of Toluene?

(a) Anesthetic effect

(b) Anxiolytic effect

(c) Convulsant effect

(d) Narcotic effect

Answer: (b)

200. Magnan's sign is associated with which of the following addictions?

(a) Alcohol

(b) Marijuana

(c) Cannabis

(d) Cocaine

Answer: (d)

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	**(d)**	3	**(d)**	4	**(a)**	5	**(c)**
6	**(a)**	7	**(c)**	8	**(d)**	9	**(a)**	10	**(c)**
11	**(a)**	12	**(a)**	13	**(a)**				

General Awareness

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

Arithmetic Ability

45	**(b)**	46	**(b)**	47	**(b)**	48	**(d)**	50	**(c)**
51	**(b)**	52	**(c)**	53	**(d)**	55	**(c)**	56	**(c)**
58	**(a)**								

General English

61	**(c)**	62	**(d)**	63	**(c)**	65	**(a)**	66	**(c)**
67	**(b)**	68	**(a)**	69	**(d)**	70	**(c)**	71	**(a)**
72	**(b)**	73	**(c)**	74	**(c)**	75	**(a)**		

Discipline1

101	**(c)**	102	**(a)**	103	**(b)**	104	**(d)**	[illegible]	**(b)**
106	**(d)**	107	**(a)**	108	**(c)**	109	**(d)**	110	**(c)**
111	**(d)**	112	[illegible]	113	**(a)**	114	**(d)**	115	**(b)**
116	**(c)**	117	**(c)**	118	**(a)**	119	**(d)**	120	**(a)**

Discipline2

121	**(b)**	122	**(b)**	123	**(a)**	124	**(d)**	125	**(c)**
126	**(a)**	127	**(b)**	128	**(b)**	129	**(a)**	130	**(a)**
131	**(d)**	132	**(a)**	133	**(b)**	134	**(b)**	135	**(c)**
136	**(d)**	137	**(c)**	138	**(b)**	139	**(a)**	140	**(d)**

Discipline3

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

Discipline4

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

Discipline5

181	**(c)**	182	**(d)**	183	**(b)**	184	**(c)**	185	**(a)**
186	**(c)**	187	**(a)**	188	**(c)**	189	**(c)**	190	**(c)**
191	**(b)**	192	**(c)**	193	**(b)**	194	**(a)**	195	**(a)**
196	**(b)**	197	**(c)**	198	**(a)**	199	**(b)**	200	**(d)**