PREVIOUS YEAR PAPER

DSSSB Assistant Bacteriologist 2021 — 26 November 2021, Shift 2

DSSSB Other Posts · 26 November 2021 · Shift 2

137 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: 63 (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 26 November 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-assistant-bacteriologist-26-nov-shift-2/

General Ability

1. Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.
LGBG, RBFD, XWJA, DRNX, ?

(a) IRNU
(b) JNVX
(c) JMRU
(d) DTUR

Answer: (c)

2. Identify the term that does NOT belong to the following series.
MAIL, REDH, WIYD, BMSA, GQOV, LUJR

(a) WIYD
(b) BMSA
(c) GQOV
(d) LUJR

Answer: (b)

3. Four words have been given, out of which three are alike in some manner and one is different. Select the word that is different.

(a) Stringent
(b) Indulgent
(c) Rigorous
(d) Tenacious

Answer: (b)

4. Select the option that is related to the third term in the same way as the second term is related to the first term.
KALE : PZOZ :: COLD : ?

(a) XOLI

(b) HLOY

(c) XLOI

(d) HOLY

Answer: (b)

5. Select the option that is related to the third word in the same way as the second word is related to the first word.
Entomology : Zoology :: Metaphysics : ?

(a) Physics

(b) Mathematics

(c) Psychology

(d) Philosophy

Answer: (d)

6. In a certain code language, 'CLEAR' is written as 'CAGJT'. How will 'BRIGHT' be written in that language?

(a) DPKEJR

(b) DEJGTR

(c) ZIGKPV

(d) ZGIPKV

Answer: (b)

7. In a certain code language, 'GLOBAL' is coded as '1410134210'.How will 'FASHION' be coded in that language?

(a) 1221716181132

(b) 1221176183112

(c) 1172216181312

(d) 1221716181312

Answer: (d)

8. (i) In a family of six persons, Manu, Nayan, Ojaswini, Pallavi, Kishore and Rishita, there are two married couples.
(ii) Pallavi is the grandmother of Manu and the mother of Nayan.
(iii) Ojaswini is the wife of Nayan and the mother of Rishita.
(iv) Rishita is the granddaughter of Kishore .
Which of the following is one of the couples?

(a) Rishita and Kishore

(b) Pallavi and Kishore

(c) Pallavi and Nayan

(d) Manu and Ojaswini

Answer: (b)

9. Pramod, Dilip, Rohan, Sukumar, Tilak, Vishak, Wasim and Nilam are sitting around a circle facing the centre. Tilak is second to the right of Rohan, who is third to the right of Pramod. Sukumar is second to the left of Pramod and fourth to the right of Dilip. Nilam is third to the right of Vishak, who is not an immediate neighbour of Pramod.What is Pramod's position with respect to Sukumar?

(a) Fourth to the left

(b) Fourth to the right

(c) Fifth to the left

(d) Sixth to the left

Answer: (d)

10. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.
Statements:
All temples are shrines.
All monuments are temples.
Conclusions:
I. Some temples are monuments.
II. Some shrines are temples.

(a) Both conclusions I and II follows

(b) Only conclusion II follows

(c) Only conclusion I follow

(d) Neither conclusion I nor II follows

Answer: (a)

11. Read the given statements and conclus[illegible]ar[illegible]lly. Assuming that the information given in the statements is true, even if it appears to be at v[illegible]e with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.
Statements:
Some marts are forests.
All forests are costumes.
No costume is a ship.
Conclusions:
I. All marts being ships is a possibility.
II. Some costumesare marts.

(a) Both conclusions I and II follow

(b) Only conclusion II follows

(c) Only conclusion I follows

(d) Neither conclusion I nor II follows

Answer: (b)

13. Select the number from among the given options that can replace the question mark (?) in the following series.
4, 7, 17, 38, 72, 123, 193, 286, 408, ?

(a) 512
(b) 521
(c) 516
(d) 561

Answer: (d)

15. If you have started from your home and moved 15 m forward to reach a garden in the north-east direction, and then turned left and moved 8 m to reach a bus stop, then you are:

(a) north of your initial position
(b) south of your initial position
(c) 18 m from the initial position
(d) West of your initial position

Answer: (a)

16. In an electric substation, pole R is 10 m north of pole A. Pole K is exactly in the middle of poles R and A. Pole N is 7 m east of pole A. Pole M is 7 m east of pole K. Pole S is 6 m north of pole M. What is the distance between poles S and N?

(a) 11 m
(b) 12 m
(c) 13 m
(d) 16 m

Answer: (a)

General Awareness

21. Stratosphere, the layer of earth's atmosphere, lies between the troposphere and:

(a) lithosphere
(b) thermosphere
(c) mesosphere
(d) exosphere

Answer: (c)

22. Angstrom is a unit of length which is equal to:

(a) 0.001 centimetre
(b) 0.1 millimetre
(c) 0.1 nanometre
(d) 0.001 metre

Answer: (c)

23. Which of the following is also known as Deuterium?
    (a) Heavy water
    (b) Oxygen
    (c) Nitrogen
    (d) Heavy hydrogen
    Answer: (d)

24. Which of the following options contains the plantation crops only?
    (a) Rice, Coffee, Rubber, Urad
    (b) Coffee, Rubber, Banana, Wheat
    (c) Cotton, Jute, Coffee, Rice
    (d) Tea, Coffee, Rubber, Banana
    Answer: (d)

25. Which of the following mountains is a fold mountain with rugged relief and high conical peaks?
    (a) The Vindhya Mountains
    (b) The Satpura Mountains
    (c) The Kilimanjaro Mountains
    (d) The Himalayan Mountains
    Answer: (d)

26. Buland Darwaza was constructed at Fatehpur Sik ter Akbar's victory over:
    (a) Sindh
    (b) Malwa
    (c) Gujarat
    (d) Mewar
    Answer: (c)

27. This invasion was followed by a series of plundering raids by the Afghan ruler Ahmad Shah Abdali, who invaded north India five times between:
    (a) 1728 and 1733
    (b) 1734 and 1736
    (c) 1743 and 1747
    (d) 1748 and 1761
    Answer: (d)

28. In which year was the battle of Sammel, also known as the Battle of Giri-Sumel, fought between the armies of Sher Shah Suri and Rao Maldeo?
    (a) 1542
    (b) 1544
    (c) 1546
    (d) 1548
    Answer: (b)

29. Which of the following Gupta cities is located in the northern most part of the India?
    (a) Thanesar
    (b) Prayaga
    (c) Ujjain
    (d) Mathura
    Answer: (a)

30. Who among the following won the Rajiv Gandhi Khel Ratna Award for Para Athletics?
    (a) Vinesh Phogat
    (b) Rani Rampal
    (c) Manika Batra
    (d) Mariyappan Thangavelu
    Answer: (d)

31. Which of the following books is written by Galileo Galilei (1632)?
    (a) Physica (Physics)
    (b) Dialogue Concerning the Two Chief World Systems
    (c) De Revolutionibus Orbium Coelestium (On the Revolutions of Heavenly Spheres)
    (d) De Humani Corporis Fabrica (On the Fabric of the Human Body)
    Answer: (b)

32. The language, that is NOT included in the 8th Sch ule of the Constitution of India is:
    (a) Oriya
    (b) Nepali
    (c) Kannada
    (d) Bhojpuri
    Answer: (d)

33. According to which of the following Schedules of the Constitution of India were the legislative powers divided between the Union and the States?
    (a) 7th Schedule
    (b) 6th Schedule
    (c) 3rd Schedule
    (d) 4th Schedule
    Answer: (a)

34. Nattupurakalaimani is a famous folk art of:
    (a) Manipur
    (b) Tamil Nadu
    (c) Karnataka
    (d) Meghalaya
    Answer: (b)

35. Which of the following is NOT a Buddhist festival?
(a) Paryushana Parva
(b) Saga Dawa
(c) Pang Lhabsol
(d) Drukpa Tshezhi
Answer: (a)

36. Which of the following institutes focuses on sustainable, equitable agriculture and rural development through participative financial and non- financial interventions?
(a) EXIM Bank
(b) NABARD
(c) SIDBI
(d) HDFC
Answer: (b)

37. What was the worker-population ratio for women in India in 2017-18?
(a) 14.2
(b) 16.5
(c) 17.5
(d) 34.7
Answer: (b)

38. Which among these is a traditional Chinese spor[illegible]at came in India in 1989?
(a) Judo
(b) Wushu
(c) Taekwondo
(d) Rugby
Answer: (b)

39. Who among these is NOT a track and field athlete?
(a) Manjeet Kaur
(b) Chitra Soman
(c) Pinki Pramanik
(d) Richa Mishra
Answer: (d)

40. Who was named as the ambassador of the World Wide Fund India in April 2020?
(a) Viswanathan Anand
(b) Virat Kohli
(c) Saina Nehwal
(d) Leander Paes
Answer: (a)

General English

63. It is expected that gold prices will rise_____ in the festival season.

(a) openly
(b) violently
(c) readily
(d) sharply

Answer: (d)

64. Choose the correct homonym pair to be filled in the following sentence:
Mala, wearing a _____ dress eloped on a horse with a _____ .

(a) bridal, bridal
(b) bridle, bridle
(c) bridal, bridle
(d) bridle, bridal

Answer: (c)

67. Select the option that is appropriate for the blank.
Nupur is a _____ visitor to our house.

(a) frequent
(b) frequently
(c) frequented
(d) frequenting

Answer: (a)

68. Select the antonym of the given word.
'Conceal'

(a) Seal
(b) Deal
(c) Reveal
(d) Heal

Answer: (c)

69. Identify the correct word from the options given below and fill in the blank.
Will you please sing on the _____ of my child's first birthday?

(a) occassion
(b) ocassion
(c) ocasion
(d) occasion

Answer: (d)

70. Select the option that can best substitute the following set of words. a polygon with six sides and six angles

(a) pentagon
(b) hexagon
(c) heptagon
(d) octagon

Answer: (b)

71. Select the correctly spelt word of the following:

(a) Arithmatic
(b) Arithmetic
(c) Arethmatic
(d) Aerthmetic

Answer: (b)

72. Mr. Mehta had a narrow escape yesterday when his car left the road. Here "a narrow escape" means.

(a) Escape by a good chance
(b) Escape by a very slight margin
(c) Escape by a very narrow road
(d) Escape by a good road

Answer: (b)

73. Choose the correct meaning of the idiom/phras
Jack of all trades

(a) A merchant involved in many occupatic
(b) A merchant who sells all kinds of Jackfruits
(c) someone who is able to do many things
(d) Someone who knows everything

Answer: (c)

74. Parts of a sentence are given in jumbled order. Arrange the parts in the right order to form a meaningful sentence.
P. agricultural industry, cattle rearing and fishing
Q. storing, distributing and handling to maintain equality
R. government should monitor the productivity of food supply from
S. and also check wastage of resources in

(a) RSPQ
(b) RQPS
(c) RPSQ
(d) PRQS

Answer: (c)

75. Parts of a sentence are given in jumbled order. Arrange the parts in the right order to form a meaningful sentence.
P. and research to promote new innovations and development
Q. as ages passed, man began to think, analyze and investigate
R. which become scientific theories and principles for further discoveries S. the mysteries of nature and found the magic in natural phenomena

(a) RSPQ
(b) RPQS
(c) SQRP
(d) QSRP

Answer: (d)

77. What are the cornerstones of making good decisions?

(a) It is essential to have a totally positive outlook of circumstances to make good decisions.
(b) It is necessary to do a lot of research before taking any decision.
(c) It is better to accept that failure is common and not expect wonderful results in order to make good decisions.
(d) It is essential to be realistic and have accurate, unbiased information to make good decisions.

Answer: (d)

78. Which option is closest in meaning to the phrase mutually inclusive?

(a) Two events are mutually inclusive when they c[illegible]both occur simultaneously
(b) In a mutually inclusive situation, one event ab[illegible]s and destroys another
(c) In a mutually inclusive situation two disparat[illegible]vents clash with each other.
(d) One event after another destroys de[illegible]ion r[illegible]ing in a person.

Answer: (a)

80. Which of the following didn't surpise the researchers.

(a) it is not just outcomes that matter but also expectations.
(b) overestimating outcomes and underestimating them are both associated with lower wellbeing
(c) Better finances are associated with higher wellbeing,
(d) being realistic about your future and making sound decisions can bring a sense of wellbeing,

Answer: (c)

Discipline1

101. Which of the following atomic numbers does NOT belong to s-block element?

(a) 19
(b) 20
(c) 38
(d) 39

Answer: (d)

102. In coordination compounds, the number of ligands is responsible for:
(a) geometry
(b) melting point
(c) boiling point
(d) solubility
Answer: (a)

103. In drug discovery, the 'Lead Compound' is:
(a) lead containing compound
(b) the starting point for drug design and development
(c) the final point for drug design and development
(d) anti-cancer drug
Answer: (b)

104. In column chromatography, we use _____ as a stationary phase.
(a) n-Hexane
(b) cotton
(c) charcoal
(d) silica gel
Answer: (d)

105. The monomer unit of natural rubber is:
(a) neoprene
(b) isoprene
(c) methane
(d) vinyl chloride
Answer: (b)

106. Another name of green chemistry is:
(a) sustainable chemistry
(b) heterocyclic chemistry
(c) soil pollution
(d) water pollution
Answer: (a)

107. Gibbs Phase rule is:
(a) F = C – P + 2
(b) F = C + P - 2
(c) F = C + P + 2
(d) F = P – C + 2
Answer: (a)

108. n-propyl bromide on treating with alcoholic KOH produces:

(a) propanol
(b) propane
(c) propyne
(d) propene

Answer: (d)

109. Which of the following is the strongest acid?

(a) Formic Acid
(b) Acetic Acid
(c) Trifluoroacetic Acid
(d) Trichloroacetic Acid

Answer: (c)

110. There are ___ number of carbon atoms present in Sesterterpenoids.

(a) 25
(b) 15
(c) 10
(d) 20

Answer: (a)

111. A cell reaction is spontaneous, if E° of the cell is:

(a) negative
(b) zero
(c) positive
(d) infinite

Answer: (c)

113. The order of half-life time of radioactive decay is:

(a) zero order
(b) first order
(c) second order
(d) third order

Answer: (b)

116. Which metal is use in fairness (skin whitening) creams?

(a) Mercury
(b) Lead
(c) Chromium
(d) Nickel

Answer: (a)

117. Which of the following statements about Adrenaline (Epinephrine) is FALSE?

(a) Non-steroid hormone

(b) First hormone to be isolated in crystalline form

(c) It is active only when given by injection

(d) It decreases blood pressure

Answer: (d)

118. What is the effect of dilution on equivalent conductivity?

(a) First increases then decreases

(b) Only increases

(c) Only decreases

(d) First decreases then increases

Answer: (b)

119. Time-dependent differential equations are those in which the initial conditions are known and one wants to know how they evolve forward in time. Which of the following is NOT included in it?

(a) Chemical Reactions (evolution of concentrations with time) ™

(b) Classical dynamics (evolution of atomic positions with time) ™

(c) Time-dependent Quantum dynamics (atoms under lasers)

(d) Time-independent Quantum dynamics (atoms under lasers)

Answer: (d)

120. Which of the following is known as frozen smok

(a) Solid CO 2

(b) Silica aerogel

(c) Red Phosphorus

(d) PAN

Answer: (b)

Discipline2

122. The end product of Skraup's synthesis is _____.

(a) pyridine

(b) quinolone

(c) isoquinoline

(d) piperidine

Answer: (b)

123. During the inversion of sucrose in the catalytic presence of dilute acid, the order of reaction is:

(a) 1

(b) 0

(c) 3

(d) 2

Answer: (a)

124. In Reissert synthesis, the final product is:

(a) quinoline

(b) furan

(c) indole

(d) trans-indigo

Answer: (c)

126. Which of the following is correct about the chemical composition of a normal man weighing 65 kg?

(a) Carbohydrates - 6.1%, Proteins - 13.8%. Lipids - 17%, Water - 61.6%, Minerals - 1.5%

(b) Carbohydrates - 1.5%, Proteins - 17.0%. Lipids - 13.8%, Water - 61.6%, Minerals - 6.1%

(c) Carbohydrates - 17%, Proteins - 1.5%. Lipids - 6.1%, Water - 61.6%, Minerals - 13.8%

(d) Carbohydrates - 13.8%, Proteins - 1.5%. Lipids - 6.1%, Water - 61.6%, Minerals -17%

Answer: (b)

127. The property of water that is NOT explained by its polarity is:

(a) solvent for hydrophobic compounds

(b) the high specific heat

(c) a high heat of vaporisation

(d) strong surface tension

Answer: (a)

128. Which of the following features of elements ma[illegible]nem appropriate for using them to synthesise molecules in living systems?

(a) Hydrophilic and hydrophobic

(b) Covalent and Hydrogen bonding

(c) Water soluble and ionic

(d) Suitable and available

Answer: (d)

129. Which of the following statements is NOT correct about colligative properties?

(a) They depend only on the number of particles of the solute in the solution.

(b) They also depend on both the nature and the identity of the solute.

(c) They help us in determining the relative molecular mass of a non-volatile solute.

(d) It is the relative lowering of vapour pressure which is a colligative property and not the lowering of vapour pressure.

Answer: (b)

130. Physical adsorption is NOT favoured in which of the following conditions?

(a) Negative ΔH

(b) Low temperature

(c) High temperature

(d) Increased pressure

Answer: (c)

131. Which of the following statements is NOT correct about conjugate acid-base pairs?

(a) A weaker acid has a stronger conjugate base, whereas a stronger acid has a weaker conjugate base.

(b) A stronger acid has a stronger conjugate base, whereas a weaker acid has a weaker conjugate base.

(c) The product of acid- and base-ionisation constants in the aqueous solutions equals the ionic product constant of water.

(d) Anions of the weak acids produce the conjugate acid and hydroxide ion, whereas the cations of the weak base produce conjugate base and hydronium ion on reaction with water.

Answer: (b)

133. C3 axis of symmetry of cyclohexane is due to which of the following conformations?

(a) Stew

(b) twist boat

(c) Chair

(d) Envelope

Answer: (c)

134. Which of the following reagents is the source of nitrogen in the Gabriel synthesis of amines?

(a) Potassium phthalimide

(b) Sodium nitrite

(c) Potassium cyanide

(d) Sodium azide

Answer: (a)

136. The chromatographic technique that can be used for the analysis of biological specificity in enzyme-substrate is:

(a) ion exchange chromatography

(b) affinity chromatography

(c) gel filtration

(d) thin layer chromatography

Answer: (b)

137. Which of the following is the correct number of enantiomer(s) in glyceraldehyde?

(a) One

(b) Two

(c) Three

(d) Four

Answer: (b)

138. Which of the following bonds links ribose and purines in a nucleotide?

(a) Phosphodiester bond
(b) Peptide bond
(c) Glycosidic bond
(d) Hydrogen bond

Answer: (c)

139. Cytochromes belong to the family of:

(a) Nucleoproteins
(b) Lipoproteins
(c) Glycoproteins
(d) Metalloproteins

Answer: (d)

140. The class of enzymes to which chymotrypsin belongs as per Enzyme Commission is:

(a) Transferases
(b) Hydrolases
(c) Ligases
(d) Lyases

Answer: (b)

Discipline3

141. Which analyte's elevated blood level is used as a sensitive indicator of impaired kidney function?

(a) Uric acid
(b) Glucose
(c) Urea nitrogen
(d) Creatinine

Answer: (d)

142. A high-protein low-carbohydrate diet has, as its biochemical basis, the potential to lead to weight loss due to which of the following?

(a) Allosteric inhibition of fatty acid synthesis
(b) Increased glucagon release
(c) Minimal insulin release
(d) Reduced cortisol release

Answer: (c)

143. Which of the following statements is correct about glycogenin?

(a) It is involved in both glycogenesis and glycogenolysis.
(b) It is found in both liver and muscles.
(c) It synthesises UDP-glucose units.
(d) It requires pyridoxal phosphate as a cofactor.

Answer: (b)

144. Muscle contraction is caused by the binding of which of the following proteins with calcium in a smooth muscle?

(a) Calmodulin
(b) Tropomyosin
(c) Myosin
(d) Actin

Answer: (a)

145. Which of the following types of mutations is responsible for sickle cell anaemia?

(a) Nonsense
(b) Insertion
(c) Deletion
(d) Missense

Answer: (d)

146. What is the minimum number of tRNAs required to bind to them for the given serine codons? UCU, UCC, UCA, UCG, AGU, AGC

(a) One
(b) Two
(c) Three
(d) Four

Answer: (c)

147. The frequency with which a restriction enzyme ıt recognises a six-base sequence will cut a large piece of DNA will be:

(a) once every 64 bases
(b) once every 256 bases
(c) once every 1,024 bases
(d) once every 4,096 bases

Answer: (d)

148. Which of the following media is most appropriate for culturing of obligate anaerobes?

(a) Complex media
(b) Reducing media
(c) Selective media
(d) Enriched media

Answer: (b)

149. Which of the following hormones is NOT produced during steroid biotransformation?

(a) Glucagon
(b) Cortisone
(c) Hydrocortisone
(d) Corticosterone

Answer: (a)

150. The alkylation and cross-linking of DNA is the mechanism of which of the following immunosuppressive drugs?

(a) Sirolimus

(b) Cyclophosphamide

(c) Prednisone

(d) Mizoribine

Answer: (b)

151. The DNA double helix is stabilised by:

(a) covalent bonds and hydrogen bonds

(b) hydrogen bonds and hydrophobic interactions

(c) hydrophobic interactions and electrostatic repulsion

(d) electrostatic repulsion and covalent bonds

Answer: (b)

152. Bundle sheath cells are seen in:

(a) open vascular bundles in stems

(b) closed vascular bundles in roots

(c) certain types of leaves

(d) fibrous tissue of fruit rinds

Answer: (c)

153. When describing the phenotypes produced by s[illegible]-influenced genes, _____.

(a) a pattern of crisscross inheritance of these [illegible]osomal traits is evident

(b) whether the gene is dominant or re[illegible]pends on gender of the person

(c) we see that the proteins produced by such genes are required for the metabolism of sex hormones

(d) it is clear that they are linked to expression of secondary sexual characters in human beings

Answer: (b)

154. Identify the TRUE statement regarding replication of a short segment of linear dsDNA.

(a) It requires one primer for the leading strand and one primer for the lagging strand.

(b) It requires many primers for the leading strand and one primer for the lagging strand.

(c) It requires many primers for the leading strand and many primers for the lagging strand.

(d) It requires one primer for the leading strand and many primers for the lagging strand.

Answer: (d)

155. In the leaf, starch is formed:

(a) in the cytoplasm of the chloroplast-containing cell

(b) between the outer and inner membranes of a chloroplast

(c) in the stroma of the chloroplast

(d) in the cavity of a thylakoid of the chloroplast

Answer: (c)

156. Look at the following two categories of properties of monosaccharides, and identify the TRUE statement.
Property A: Hexose and Pentose
Property B: Aldose and Ketose

(a) Dextrose and fructose do not differ in either Property A or Property B.

(b) Dextrose and fructose do not differ in Property A, but differ in Property B.

(c) Dextrose and fructose differ in Property A, but do not differ in Property B.

(d) Dextrose and fructose differ in both Property A and Property B.

Answer: (b)

157. The experimental data collected by a scientist can be deposited in a/an _____ database.

(a) archival

(b) knowledge

(c) secondary

(d) experimental

Answer: (a)

158. A dietician was studying the effect of a low-calorie diet on a group of 15 teenagers. She measured their weights before and after the diet treatment. Which test should she use to analyse her results?

(a) A paired t-test

(b) A chi-square test

(c) A one-way ANOVA test

(d) A pooled variance t-test

Answer: (a)

159. If two plants, each homozygous for two unlinked traits, are allowed to cross-pollinate, what percentage of the progeny will be identical to the parental genotypes for these two traits?

(a) 0%

(b) Around 25%

(c) Around 50%

(d) Around 75%

Answer: (a)

160. Diazotrophic organisms that are often used as biofertilizers are characterised by:

(a) the ability to form root nodules on leguminous plants

(b) their autotrophic photosynthetic mode of nutrition

(c) the presence of genes for nitrogenase in their genome

(d) the ability to grow in anaerobic cultures at acidic pH

Answer: (c)

Discipline4

161. Tea from the bark of the willow tree is used to treat fevers. The medicinal component salicilin is used to manufacture the common drug:

(a) Amoxicillin
(b) Atropine
(c) Amphetamine
(d) Aspirin

Answer: (d)

162. When a leaf extract is subjected to paper chromatography, the pigments separate on basis of their:

(a) molecular weight
(b) charge per unit mass
(c) solubility in the mobile phase
(d) cohesion with the stationary phase

Answer: (c)

163. Some fungi are called 'imperfect' because:

(a) they lack true nuclei
(b) they reproduce only asexually
(c) they have cellulosic cell walls
(d) they lack multicellular structures

Answer: (b)

164. Pheromones are found in various species of in[illegible]ebrates (like insects) and vertebrates (like mammals). The common feature of these s[illegible]tan[illegible] is that they are all:

(a) volatile compounds
(b) water soluble molecules
(c) hydrophobic complexes
(d) homopolymeric conjugates

Answer: (a)

166. Ti plasmids are used to introduce cloned genes into plant cells. In the transformed plant cell, the 'insert' introduced via a Ti plasmid exists as a:

(a) small independent linear chromosome (like a YAC)
(b) segment of integrated DNA (like a provirus)
(c) multi-copy circular plasmid (extra-chromosomal DNA)
(d) single-copy cytoplasmic plasmid (extranuclear DNA)

Answer: (b)

167. Which of the following statements is FALSE about malaria?

(a) The malarial parasite infects RBC in humans and mosquitoes.
(b) The parasite enters a human body through the saliva of a mosquito.
(c) The malarial parasite infects liver cells and RBC in humans.
(d) The malarial parasite infects neither liver cells nor RBC in mosquitoes.

Answer: (a)

169. What is cause of type I diabetes?

(a) Inability of liver cells to take up glucose when needed

(b) Overactivity of liver cells leading to continuous release of glucose

(c) Defects in the insulin signalling pathway leading to hyperglycaemia

(d) Impaired ability of the body to synthesise insulin

Answer: (d)

170. To test the serum of people suspected to be infected with HIV for the presence of antibodies, we need to do a/an:

(a) direct ELISA test

(b) indirect ELISA test

(c) sandwich ELISA test

(d) competitive ELISA test

Answer: (b)

171. In addition to a queen bee, a typical bee hive has:

(a) hundreds of drones and hundreds of workers

(b) hundreds of drones and thousands of workers

(c) dozens of drones and hundreds of workers

(d) dozens of drones and thousands of workers

Answer: (b)

173. Of the following, the only correct combination of vector, pathogen and disease is:

(a) Mosquito vector – Protozoan pathogen – Yellow fever

(b) Flea vector – Viral pathogen – Japanese encephalitis

(c) Lice vector – Viral pathogen – Typhus fever

(d) Tick vector – Bacterial pathogen – Lyme disease

Answer: (d)

174. Identify the TRUE statement regarding unsaturated fatty acids synthesised by eukaryotes.

(a) The double bonds can only be cis-bonds that are three carbon atoms apart.

(b) The double bonds can be cis-bonds or trans-bonds that are two or three carbon atoms apart.

(c) The double bonds can be trans-bonds, but there is no rule on how apart they are.

(d) The double bonds can only cis-bonds, but they can be three or six carbon atoms apart.

Answer: (a)

176. Which of the following cellular organelles are covered by a double membrane?

(a) Peroxisomes

(b) Golgi apparatus

(c) Chloroplasts

(d) Endoplasmic reticulum

Answer: (c)

177. Intermediate fibres are made up of:

(a) keratin

(b) tubulin

(c) actin

(d) myosin

Answer: (a)

178. What happens to the chromosome number in the first meiotic division?

(a) It remains 2n.

(b) It becomes 4n from 2n.

(c) It is reduced from 2n to 1n.

(d) It becomes 0.5n from 2n.

Answer: (c)

179. When two genes are not assorted independently, it is due to:

(a) repulsion

(b) linkage

(c) crossing over

(d) recombination

Answer: (b)

180. Which of the following is NOT a function of RecB ?

(a) Endonuclease

(b) Helicase

(c) Primase

(d) Exonuclease

Answer: (c)

Discipline5

181. Which of the following is a defining characteristic of triplex DNA?

(a) Watson-Crick base pairing

(b) G-tetraplex

(c) Hydrogen bonding

(d) Hoogsteen pairing

Answer: (d)

182. Isomeric forms of monosaccharides that differ only in their configuration about the hemiacetal or hemiketal carbon atom are known as:

(a) enantiomers

(b) anomers

(c) epimers

(d) stereomers

Answer: (b)

183. When a compound binds to the enzyme-substrate complex and causes inhibition of activity, it is termed as:

(a) uncompetitive inhibitor
(b) competitive inhibitor
(c) irreversible inhibitor
(d) non-competitive inhibitor

Answer: (a)

184. Which of the following enzymes converts fructose 1, 6-bisphosphate to glyceraldehyde 3-phosphate during glycolysis?

(a) Hexokinase
(b) Aldolase
(c) Phosphofructokinase
(d) Phosphohexose isomerase

Answer: (b)

185. In a native PAGE, separation of proteins occurs on the basis of:

(a) net negative charge
(b) net size
(c) net charge, size and shape
(d) net positive charge

Answer: (c)

186. The molecule A is required to be tightly bound ne enzyme E for proper activity of E. Which of the following terms best describes A?

(a) Apoenzyme
(b) Coenzyme
(c) Prosthetic group
(d) Holoenzyme

Answer: (c)

187. According to the Bergey's manual of systemic bacteriology, Escherichia belongs to which class of proteobacteria?

(a) Alphaproteobacteria
(b) Betaproteobacteria
(c) Gammaproteobacteria
(d) Deltaproteobacteria

Answer: (c)

188. If 100 bacterial cells are allowed to grow for three generations, what will be the number of bacterial cells after three generations?

(a) 300
(b) 200
(c) 800
(d) 600

Answer: (c)

189. Which of the following is the first immunoglobulin which is expressed during B cell development?

(a) IgA
(b) IgM
(c) IgD
(d) IgE

Answer: (b)

190. Which of the following is true about sigma factor?

(a) It binds only with RNA polymerase.
(b) It binds only with –35 sequence.
(c) It binds with RNA polymerase and –-10 sequence.
(d) It binds with RNA polymerase, –10 sequence and –35 sequence.

Answer: (d)

191. Which of the following can function as a promc for eukaryotic RNA polymerase II?

(a) Pribnow Box
(b) Shine-Dalgarno sequence
(c) TATA Box
(d) –35 sequence

Answer: (c)

192. Which of the following may generate biologically different proteins from the same gene following translation?

(a) Alternative splicing
(b) Capping
(c) Polyadenylation
(d) mRNA decay

Answer: (a)

193. To which of the following is the methyl group added during DNA methylation in eukaryotes?

(a) Adenine
(b) Guanine
(c) Thymine
(d) Cytosine

Answer: (d)

194. Plant cells from which the cellulose wall has been removed are termed as:

(a) explant
(b) callus
(c) protoplast
(d) meristem

Answer: (c)

195. In callus culture, increasing the level of which of the following hormones causes shoot formation?

(a) Auxin
(b) Gibberellin
(c) Ethylene
(d) Cytokinin

Answer: (d)

196. Which of the following techniques can be used to diagnose Down syndrome?

(a) DNA sequencing
(b) Fluorescence in situ hybridisation
(c) PCR
(d) Western blotting

Answer: (b)

197. Which of the following does NOT fall under the s[illegible]e of animal biotechnology?

(a) Xenotransplantation
(b) Improved breeding
(c) Animal feeding
(d) Transgenic animal

Answer: (c)

198. A cell line cultured in one flask has been sub-cultured into four different flasks. What is the splitting ratio?

(a) 1 : 2
(b) 4 : 1
(c) 2 : 1
(d) 1 : 4

Answer: (d)

199. Which of the following is NOT a source of biofuel?

(a) Corn
(b) Fungi
(c) Sugarcane
(d) Algae

Answer: (b)

200. Which of the following microorganisms may be used for bioremediation of benzene?

(a) Diatoms

(b) Bacillus subtilis

(c) Pseudomonas putida

(d) Micrococcus luteus

Answer: (c)

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

General Awareness

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

General English

63	**(d)**	64	**(c)**	67	**(a)**	68	**(c)**	69	**(d)**	70	**(b)**	71	**(b)**	72	**(b)**
73	**(c)**	74	**(c)**	75	**(d)**	77	**(d)**	78	**(a)**	80	**(c)**				

Discipline1

101	**(d)**	102	**(a)**	103	**(b)**	104	**(d)**	105	**(b)**	106	**(a)**	107	**(a)**	108	**(d)**
109	**(c)**	110	**(a)**	111	**(c)**	113	**(b)**	116	**(a)**	117	**(d)**	118	**(b)**	119	**(d)**
120	**(b)**														

Discipline2

122	**(b)**	123	**(a)**	124	**(c)**	126	[illegible]	127	**(a)**	128	**(d)**	129	**(b)**	130	**(c)**
131	**(b)**	133	**(c)**	134	**(a)**	136	**(b)**	137	**(b)**	138	**(c)**	139	**(d)**	140	**(b)**

Discipline3

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

Discipline4

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

Discipline5

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