PREVIOUS YEAR PAPER

DSSSB Scientific Assistant (biology) 2021 — 25 November 2021, Shift 1

DSSSB Other Posts · 25 November 2021 · Shift 1

147 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: 53 (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 November 2021, Shift 1. 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-biology-25-nov-shift-1/

General Ability

1. Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.
QFY, UEC, YDS, CCP, ?

(a) MBG
(b) GBM
(c) HBN
(d) HNB

Answer: (b)

2. Identify the letter-cluster that does NOT belong to the following series.
BNQJ, AQLC, ZTGU, YWBO, XZWH, WCRA

(a) WCRA
(b) XZWH
(c) YWBO
(d) ZTGU

Answer: (d)

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

(a) Deceit
(b) Hypocrisy
(c) Fraud
(d) Honesty

Answer: (d)

4. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.
BQLG : FLOE :: SBFM : _____

(a) OGCO

(b) WWIK

(c) WGCK

(d) OWIO

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.
Bones : Osteology :: Population:_____

(a) Cytology

(b) Demography

(c) Geography

(d) Geology

Answer: (b)

6. In a certain code language, 'RULING' is written as 'URQDGN'. How will 'MOTHER' be written in that language?

(a) OMOMRE

(b) RJHTJM

(c) OMYCRE

(d) OMYMRE

Answer: (c)

7. In a certain code language, 'ORANGE' is coded as '99'.How will 'CLOUDY' be coded in that language?

(a) 78

(b) 80

(c) 82

(d) 84

Answer: (b)

8. Anvita is the sister of Bamika, who is the wife of Chiru. Divya and Esha are the daughters of Bamika. Fiyan is the son of Anvita and Girija is the wife of Anvita's only son. Hriday is married to Esha and Kriti is a daughter of Hriday. Itikia is the sister of Junaid, who is the son of Girija.How is Bamika related to Kriti?

(a) Paternal grandmother

(b) Mother

(c) Sister

(d) Maternal grandmother

Answer: (d)

9. Alok, Bidan, Chaitu, Divija, Emiya, Falgun and Giri are sitting around a circle and are facing the centre.Giri is second to the left of Chaitu, who is to the immediate left of Falgun.Alok is third to the left of Emiya.Bidan is between Diviaj and Emiya.Which of the following pairs has the 1st person sitting to the immediate left of the 2nd person?

(a) Bidan, Emiya

(b) Chaitu, Alok

(c) Giri, Divija

(d) Divija, Giri

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 :
No watch is pot.
Some pots are mobiles.
Conclusions :
I. All mobiles being watch is a possibility.
II. Some mobiles being watch is a possibility.

(a) Only conclusion I follows.

(b) Only conclusion II follows.

(c) Neither conclusion I nor II follow.

(d) Either conclusion I or II follow.

Answer: (b)

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:
No nose is magnet.
Not a single magnet is basket.
Every basket is stone.
Conclusions:
I. Some stones which are baskets are nose as well.
II. No nose is a basket.
III. Some stones are baskets.

(a) All conclusions I, II and III follow.

(b) Either conclusion I or II follow.

(c) Only conclusion III follows.

(d) Only conclusion II and III follow.

Answer: (c)

12. Which two signs need to be interchanged to make the following equation correct?
100 − 156 + 13 × 8 ÷ 6 = 10

(a) × and −

(b) + and ÷

(c) + and −

(d) × and ÷

Answer: (b)

13. Select the number from among the given options that can replace the question mark (?) in the following series.
4, 9, 18, 39, 80, 165, ?

(a) 332

(b) 343

(c) 323

(d) 334

Answer: (d)

15. Aditya travelled from his home to the convention hall at a distance of 100 m. He turned right and walked 70 m, then again turned right and walked 90 m to reach Empress towers. Finally, he turned right and walked 70 m to reach his grandfather's house. How far is he from the starting point?

(a) 15 m

(b) 13 m

(c) 12 m

(d) 10 m

Answer: (d)

16. The town of Pramod is located on BHEL. The town of Anmol is to the west of Pramod. Tanya is to the east of Anmol but to the west of Pramod. Kalki is to the east of Bidan but to the west of Tanya and Anmol. If they are all in the same district, which town is the farthest east?

(a) Pramod

(b) Kalki

(c) Anmol

(d) Bidan

Answer: (a)

General Awareness

21. Table salt is also known as:

(a) iodine

(b) sodium chloride

(c) helium

(d) potassium chloride

Answer: (b)

22. The discovery of electron was done by:
    (a) James Chadwick
    (b) Joseph John Thomson
    (c) John Dalton
    (d) Ernest Rutherford

    Answer: (b)

23. For which of the following is the unit of speed knot?
    (a) Ships
    (b) Rockets
    (c) Buses
    (d) Aeroplanes

    Answer: (a)

24. Koyna dam is situated on Koyna river which is a tributary of the:
    (a) Mahi river
    (b) Kaveri river
    (c) Godavari river
    (d) Krishna river

    Answer: (d)

25. Which of the following statements is INCORRECT about the rice crop?
    (a) It grows in the plains of north and north-east India.
    (b) It is a kharif crop.
    (c) It requires above 25°C temperature.
    (d) Our country is the largest producer of rice in the world.

    Answer: (d)

26. In which language did Banabhatta write Harshavardhana's biography the 'Harshacharita'?
    (a) Braj
    (b) Sanskrit
    (c) Awadhi
    (d) Pali

    Answer: (b)

27. In which year did Nawab Siraj-ud-Daulah become the Nawab of Bengal after Alivardi Khan?
    (a) 1752
    (b) 1753
    (c) 1754
    (d) 1756

    Answer: (d)

28. Moth Ki Masjid is a heritage building located in Delhi, and was built in 1505 by Wazir Miya Bhoiya, Prime Minister during the reign of:

(a) Sikandar Lodi
(b) Babar
(c) Alauddin Khilji
(d) Ibrahim Lodi

Answer: (a)

29. Who was the first English diplomat to visit Akbar's court in AD 1585?

(a) Sir Hector Munro
(b) Ralph Fitch
(c) Sir Thomas Roe
(d) Captain Hawkins

Answer: (b)

30. PRAGATI is an ambitious multi-purpose and multi-modal platform. When was it launched by PM Modi?

(a) March 2015
(b) March 2016
(c) March 2017
(d) March 2018

Answer: (a)

31. Who among the following received the Maharas[illegible]a Bhushan Award 2021?

(a) Lata Mangeshkar
(b) Sachin Tendulkar
(c) Asha Bhosale
(d) Sunil Gavaskar

Answer: (c)

32. Who was the prime minister of India when the emergency was imposed in India on 25 June1975?

(a) Lal Bahadur Shastri
(b) Rajiv Gandhi
(c) Indira Gandhi
(d) Jawaharlal Nehru

Answer: (c)

33. 'Right to elementary education' comes under which Article of the Constitution of India?

(a) Article 22
(b) Article 21A
(c) Article 19
(d) Article 20

Answer: (b)

34. In which of the following festivals are roli, aipun, rice, water, flowers, a bell and a conch are necessary for the puja?

(a) Diwali
(b) Ram Navami
(c) Raksha Bandhan
(d) Janmashtami

Answer: (b)

35. Which of the following runs the Toilet Accelerator, the world's 1st accelerator programme dedicated to sanitation entrepreneurs in low-income markets?

(a) India Sanitation Coalition
(b) The Toilet Board Coalition
(c) Water and Sanitation Regulator
(d) National Water and Sanitation Company

Answer: (b)

36. Who heads the Cabinet Committee on Economic Affairs in India?

(a) Finance Minister
(b) Prime Minister
(c) Minister for Commerce
(d) Cabinet Secretary

Answer: (b)

37. In which year was the National Institution for Tra orming India, better known as NITI Aayog, formed via a resolution of the Union Cabin

(a) 2013
(b) 2014
(c) 2015
(d) 2017

Answer: (c)

38. The host country/countries of the upcoming 2023 FIFA Women's World Cup (football) is/are:

(a) Argentina
(b) Brazil and Peru
(c) Australia and New Zealand
(d) France and UK

Answer: (c)

39. Kabaddi is the national sport of which of the following countries?

(a) Pakistan
(b) Sri Lanka
(c) Bangladesh
(d) Kenya

Answer: (c)

General English

63. Vitamins are complex compounds that the human body requires to _____ normally.

(a) behave

(b) function

(c) move

(d) regulate

Answer: (b)

64. Choose the correct homonym pair to be filled in the following sentence:
Ramola said she would soon _____the translation of the poems in _____ language. Sita said to the teacher that she will ____ her work tomorrow while Ram was speaking ____ language.

(a) finish, Finnish, finish, Finnish

(b) finnish, Finish, finnish, Finish

(c) finish, Finish, finish, Finish

(d) finnish, Finnish, finnish, Finnish

Answer: (a)

65. Read the following sentence and identify the part that has an error.
I would have /bought you a nice gift/ if I knew/ it was your birthday

(a) I would have

(b) bought you a nice gift

(c) if I knew

(d) it was your birthday

Answer: (c)

67. Select the option that is appropriate for the blank.
He had no choice ____ to quit.

(a) and

(b) but

(c) or

(d) nor

Answer: (b)

68. Choose the most appropriate ANTONYM of the given word. diverse

(a) varied

(b) sundry

(c) similar

(d) lateral

Answer: (c)

69. Identify the correct word from the options given below and fill in the blank.
Measuring the dosage of the medicine with teaspoons may result in an _____ overdose or under dose.

(a) inadvertent
(b) inadvartent
(c) inadvertant
(d) inadvertaint

Answer: (a)

70. Choose the option with the correct spelling.

(a) Unaccustomed
(b) Unacustomed
(c) Unaccusttomed
(d) Unacusstomed

Answer: (a)

71. Choose the most appropriate one-word substitute for the given group of words.
Path followed by a planet or moon around another body

(a) Orbit
(b) Asteroid
(c) Galaxy
(d) Meteor

Answer: (a)

72. It is of no use to build castles in the air. ... something solid. What does an idiom "to build castles in the air" mean?

(a) To have silly hopes and dreams
(b) To destroy something
(c) To speak only and do nothing
(d) To build castles

Answer: (a)

74. Parts of a sentence are given in jumbled order. Arrange the parts in the right order to form a meaningful sentence.
P. arranged all the things and gave invitation to all other colleagues but felt Q. very depressed that all hotels and restaurants were booked
R. we decided to give a surprise birthday party to our colleague
S. and could not find any alternative, so we simply greeted him and felt sorry .

(a) PSQR
(b) SPRQ
(c) RPQS
(d) QPSR

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.as people were fascinated with moving pictures of the persons
Q. and the long-lasting audio-visual effect
R. with the coming of television, radio sets were least preferred
S. motivate people to buy it according to their budget

(a) RQPS
(b) RPQS
(c) SQPR
(d) PQSR

Answer: (b)

76. Why is the idea of 'the world loves a winner' not necessarily good for us?

(a) Endlessly chasing success often leads to high levels of stress and damage in the body.
(b) The concept of success is detrimental to a person's health.
(c) Being successful is a sure-shot path to an early grave.
(d) It is essential to win every professional battle

Answer: (a)

77. Select the option that completes the following sentence:
Natural disasters, pollution, accidents and extreme weather _____ a person's stress levels considerably.

(a) Infect
(b) Affect
(c) Effect
(d) Defect

Answer: (b)

78. What does the phrase break his spirit mean?

(a) To strike someone until the person collapses
(b) To kill someone in a cruel manner
(c) To destroy someone's morale and demoralize them
(d) To realize that the spirit has a physical shape

Answer: (c)

79. Select the option closest in meaning to the following word:
Lethargic

(a) Engaged
(b) Articulate
(c) Torpid
(d) vivacious

Answer: (c)

80. Which methods are strategically crucial for stress reduction?

(a) Hobbies and diet

(b) Meditation and exercise

(c) Prayer and massage

(d) Music and dance

Answer: (b)

Discipline1

101. What would be the proportion of AAbb individuals in a cross between two AaBb individuals?

(a) 1/64

(b) 1/16

(c) 1/4

(d) 3/16

Answer: (b)

102. Conversion of Glucose to Pyruvate takes place during the:

(a) citric acid cycle

(b) Calvin cycle

(c) glycolysis

(d) Gluconeogenesis

Answer: (c)

103. A plasmid vector used in recombinant DNA tec ology has all of the following features, EXCEPT:

(a) unique restriction enzyme sites

(b) DNA ligase coding genes

(c) selectable marker genes

(d) origin of replication

Answer: (b)

104. Which of the following plant parts is NOT derived from the zygote?

(a) Shoot apical meristem

(b) Hypocotyl

(c) Endosperm

(d) Cotyledon

Answer: (c)

105. Monocots, Monocotyledonae or Liliopsida belong to which of the following taxonomic ranks?

(a) Family

(b) Order

(c) Class

(d) Division

Answer: (c)

106. Which of the following diseases in plants is caused by Albugo species?

(a) White rust

(b) Stem gall

(c) Witches broom

(d) Late blight

Answer: (a)

107. Algal blooms are associated with:

(a) sexual reproduction

(b) pathogenesis

(c) eutrophication

(d) parasitism

Answer: (c)

108. Which of the following does NOT contribute to the evolution of a species?

(a) Migration

(b) Genetic drift

(c) Acquired characters

(d) Natural Selection

Answer: (c)

109. In a normal distribution, what per cent of the pop ion will lie between mean ± 2 standard deviations?

(a) 34%

(b) 68%

(c) 95%

(d) 99%

Answer: (c)

110. If 1% of the total genome consists of protein coding DNA sequences, the remaining 99% of the genome will consist of all of the following sequences, EXCEPT:

(a) ribosomal RNA gene

(b) satellite DNA

(c) promoter

(d) codon

Answer: (d)

111. Which of the following represents the female gametophyte in angiosperms?

(a) Ovule

(b) Megaspore

(c) Egg cell

(d) Embryo sac

Answer: (d)

112. Walnut plants secrete a chemical called juglone into the soil that inhibits the growth of other plants around it. This type of interaction is called:

(a) parasitism
(b) commensalism
(c) amensalism
(d) mutualism

Answer: (c)

113. The resolving power of a light microscope can best be increased by:

(a) using monochromatic light
(b) increasing magnification
(c) increasing numerical aperture
(d) using quartz lenses

Answer: (c)

114. During light reactions of photosynthesis, carotenoids play a role in the:

(a) evolution of oxygen
(b) transfer of light energy to PSII reaction centre chlorophyll
(c) electron transport from PSII to PSI
(d) reduction of NADP

Answer: (b)

115. The symptomatic treatment of genetic diseases nan is called:

(a) Eugenics
(b) Genetic engineering
(c) Genetic counselling
(d) Euphenics

Answer: (d)

116. Chediak-Higashi Syndrome is an example of:

(a) Autosomal dominant disease
(b) Co-dominance disease
(c) Autosomal recessive disease
(d) Epistasis disease

Answer: (c)

117. D-loop or displacement loop in vertebrates is an example of:

(a) Unidirectional DNA replication
(b) Bidirectional DNA replication
(c) Semi-conservative replication
(d) Semi-discontinuous DNA replication

Answer: (a)

118. The total rate of photosynthesis, including the biomass used up in respiration during the period of measurement, is referred to as:

(a) Net primary productivity
(b) Gross primary productivity
(c) Secondary productivity
(d) Gross community productivity

Answer: (b)

119. The full form of BLAST is:

(a) Basic Local Alignment Search Tool
(b) Belt Line Alignment Search Tool
(c) Band Line Alignment Search Text
(d) Broad Local Alignment Search Task

Answer: (a)

120. UAG termination codon is called:

(a) Amber
(b) Ochre
(c) Opal
(d) Stile

Answer: (a)

Discipline2

121. _____ is the evolutionary and ec[illegible]ical [illegible]nomics of social behaviour.

(a) Animal behaviour
(b) Behaviour genetics
(c) Sociogenomics
(d) Hybridisation

Answer: (c)

122. Hypersecretion of growth hormone in an adult causes _____

(a) Gigantism
(b) Acromegaly
(c) Grave's disease
(d) Myxedema

Answer: (b)

123. The flavoprotein found in the nucleus of most clock neurons that allows the organism to respond to light by regulating gene expression is:

(a) Cytochrome
(b) Flavonoid
(c) Oxy-cytochrome
(d) Cryptochrome

Answer: (d)

124. The centipedes and millipedes are jointly known as _____.

(a) Myriapods
(b) Chilopods
(c) Diplopods
(d) Hexapods

Answer: (a)

125. _____ is the chemical obtained from aquatic plants used in for gelling, thickening and stabilising.

(a) Carrabrem
(b) Carrageenan
(c) Agar-agar
(d) Monogreen

Answer: (b)

126. Two regions in the human beta-like globin gene cluster contain non-fictional sequences called:

(a) Pseudogenes
(b) Duplicate genes
(c) Transposons
(d) Retrotransposons

Answer: (a)

127. _____ is defined as the permanent loss of repr ıctive ability of microorganisms under ideal environmental conditions.

(a) Microbial death rate
(b) Microbial death
(c) Microbial deletion
(d) Elimination

Answer: (b)

128. The 5′ untranslated region (UAAGGAGGU) in bacteria at the end of mRNA, is a sequence that does not encode any of the amino acids of a protein but serves as the ribosome-binding site during translation, is called the _____.

(a) Shine-Dalgarno sequence
(b) Zinc finger motifs
(c) Protein-coding region
(d) Poly(A) tail

Answer: (a)

129. Which of the following features does not fall under the police inquest?

(a) Can be held in all cases of suspicious deaths
(b) Can order a body to be exhumed
(c) Can Send dead bodies for autopsy indiscriminately
(d) Can order chemical analysis of viscera

Answer: (b)

130. Identify the INCORRECT statement about differential scanning calorimetry.

(a) It is a thermal analytical technique like differential thermal analysis.

(b) It can detect both endothermic and exothermic events.

(c) It can detect both the combustion of organic matter and the evaporation of water

(d) During DSC analysis, both the sample and an inert reference material are subjected to different temperature programmes.

Answer: (d)

131. Which of the following is an INCORRECT statement about Questioned Document?

(a) It has not been written on the sides of houses, on mirrors and on tables.

(b) It can be written in ink, blood or even lipstick.

(c) It can be written on any piece of paper.

(d) It includes forged passports, wills, currency, draft cards and driver's licenses.

Answer: (a)

133. Which of the following is the most often used catalytic colour test for blood due to its sensitivity and safety reasons?

(a) Phenolphthalein

(b) Fluorescein

(c) Haemochromogen test

(d) Benzidine

Answer: (a)

134. Which of the following roles will be played by a forensic psychologist when a court may wish to know how likely an offender is to reoffend before the sentence is decided?

(a) Clinical role

(b) Experimental role

(c) Actuarial role

(d) Advisory role

Answer: (c)

135. The class characteristic of a fired bullet or cartridge casing is:

(a) breech face markings

(b) bullet striations

(c) number of lands and grooves

(d) ejector markings

Answer: (c)

136. Which of the following is the photographic technique suitable for showing the outline of a footprint on a carpet?

(a) Ultraviolet-light photography

(b) Macrophotography

(c) Microphotography

(d) Laser-beam photography

Answer: (d)

137. Which of the following is the first virus to infect Java files?

(a) Jerusalem

(b) Melissa

(c) Tristate

(d) Strange Brew

Answer: (d)

138. Consider the following data and answer the question that follows. Average distance (d) = 40.50 ft, Speedometer reading entering skid (s) = 28 mph. The correct value of the drag factor for the given data will be:

(a) 0.645

(b) 0.893

(c) 1.42

(d) 0.7

Answer: (a)

139. Which of the following is NOT correct about Address Resolution Protocol (ARP) and ARP spoofing?

(a) ARP is how network devices associate MAC addresses with IP addresses.

(b) ARP spoofing is a technique in which an attacker sends fake ARP messages onto a metropolitan area network.

(c) ARP enables devices on a local computer netw . to find each other.

(d) ARP spoofing allows an attacker to intercept a (passwords, credit card numbers, etc.) being transmitted on the network.

Answer: (b)

140. Which of the following are the two parts of the body that are most useful for determining sex?

(a) Femur, pelvis

(b) Humerus, skull

(c) Pelvis, skull

(d) Pelvis, tibia

Answer: (c)

Discipline3

141. Which of the following phases of development of anthropology in India was added by Basu Roy in addition to the one given by LP Vidyarthi?

(a) Formative phase

(b) Evaluative phase

(c) Analytical phase

(d) Constructive phase

Answer: (b)

142. The study of the relationships and interactions among humans, their biology, their cultures and their physical environments is known as:

(a) Anthropology

(b) Ecology

(c) human ecology

(d) cultural ecology

Answer: (c)

143. Petrified wood is a common example of which of the following altered preservation types?

(a) Permineralisation

(b) Recrystallisation

(c) Replacement

(d) Carbonisation

Answer: (a)

144. What will be the frequency of carriers in the next generation if the recessive trait is shown by 4% of the population?

(a) 4%

(b) 12%

(c) 24%

(d) 32%

Answer: (d)

145. Which of the following Diffusionist Schools advocated that Culture first evolved in Egypt and then spread to the far corners of the world?

(a) American Diffusionist School

(b) German Diffusionist School

(c) British Diffusionist School

(d) Both American and German Diffusionist Schools

Answer: (c)

146. Which of the following statements is INCORRECT about resting heart rate (RHR)?

(a) It is one of the simplest cardiovascular parameters.

(b) It usually averages 60 to 80 beats per minute (bpm).

(c) Rates below 60 bpm, referred to as tachycardia, and rates above 100 bpm, referred to as bradycardia, are clinical heart disorders.

(d) Elevated heart rate (>80-85 bpm) measured under resting conditions is directly associated with the risk of developing hypertension and atherosclerosis.

Answer: (c)

147. Which of the following is a correct statement about brachial index?

(a) It is represented as the length of the forearm relative to the lower limb.

(b) A low brachial index is beneficial for sports in which longer propulsive drive of the forearm is desirable.

(c) An athlete who has a high brachial index tends to have short force arms which benefit in athletics such as shot put.

(d) A high brachial index facilitates for longer stroke length.

Answer: (d)

148. The ATD angles of a healthy person and a Down syndrome person are:

(a) 80% and 7%, respectively

(b) 7% and 80%, respectively

(c) 85% and 15%, respectively

(d) 8% and 70%, respectively

Answer: (b)

149. The new world monkeys that have been observed to use tools to obtain food in its natural habitat are:

(a) Capuchins

(b) Howler monkeys

(c) Marmosets

(d) Tamarins

Answer: (a)

150. The Indian state where tank irrigation has been popular since the ancient period is:

(a) Andhra Pradesh

(b) Rajasthan

(c) West Bengal

(d) Tamil Nadu

Answer: (d)

151. Which of the following is a non-government organisation that is working in the field of disaster management and with which anthropologists are associated?

(a) Disaster Aid UK

(b) USAID

(c) World Vision

(d) NDRF

Answer: (c)

152. The hydrophobic effect in a protein structure occurs primarily due to which of the following?

(a) Increased hydrogen bond formation

(b) Increased the entropy of water

(c) Reduced steric hindrance between amino acid side chains

(d) Minimised van der Waals interactions

Answer: (b)

154. Which of the following enzymes' mutation will lead to the accumulation of lactic acid in liver?

(a) Phosphofructokinase-1
(b) Cytoplasmic malate dehydrogenase
(c) Pyruvate kinase
(d) Glucokinase

Answer: (b)

155. Which of the following is most useful as a tumour marker in colorectal cancer?

(a) Human Chorionic Gonadotropin
(b) Alpha-Fetoprotein
(c) Carcinoembryonic Antigen
(d) Tissue Polypeptide Antigen

Answer: (c)

156. Which of the following chromatographic techniques is used for Cot analysis?

(a) Ion-exchange chromatography
(b) Gel filtration chromatography
(c) Paper chromatography
(d) Hydroxyapatite chromatography

Answer: (d)

157. Which of the following interactions between lipid [illegible]ins are important to stabilise the plasma membrane structures?

(a) Hydrophobic and van der Waals interactions
(b) Hydrogen bond and van der Waals [illegible]
(c) Hydrophobic and ionic interactions
(d) Ionic and covalent bonds

Answer: (a)

158. The cell types that are NOT considered a professional antigen-presenting cell are:

(a) dendritic cells
(b) B cells
(c) Neutrophiles
(d) Macrophages

Answer: (c)

159. The two most often used meat tenderising enzymes are:

(a) papain and chymotrypsin
(b) trypsin and chymotrypsin
(c) trypsin and elastin
(d) papain and bromelain

Answer: (d)

160. Which of the following characteristics will a double-stranded DNA molecule share with a double-stranded RNA molecule of the same size?

(a) Both will have secondary structures.

(b) Both will contain inverted repeats.

(c) Both will be degraded by alkaline base.

(d) Both will contain four types of base-pairs.

Answer: (a)

Discipline4

161. Which of the following is the first genetically engineered drug approved by the Food and Drug Administration?

(a) Human Insulin

(b) Interferon

(c) Penicillin

(d) Somatostatin

Answer: (a)

162. Which of the following techniques makes use of fluorescent dyes?

(a) SDS-PAGE

(b) 2-dimensional gel electrophoresis

(c) Difference in gel electrophoresis

(d) Native-PAGE

Answer: (c)

163. Comparative genomics will be a preferred over the conventional sequencing analysis for the identification of:

(a) Exons

(b) transcribed regions

(c) repeat containing regions

(d) regulatory regions

Answer: (d)

164. Which of the following is an amino acid side chain of albumin that participates in this buffering range between 7.2 and 7.4?

(a) Aspartate

(b) Histidine

(c) Lysine

(d) Serine

Answer: (b)

165. Which of the following spores is NOT formed as a result of sexual reproduction in fungi?

(a) Zygospore
(b) Sporangiospore
(c) Ascospore
(d) Basidiospore

Answer: (b)

166. Which of the following pigments is present only in green and purple bacteria?

(a) Chlorophyll a
(b) Chlorophyll b
(c) Chlorophyll c
(d) Bacteriochlorophyll

Answer: (d)

167. According to the Baltimore classification of viruses, which class of viruses contains a double-stranded RNA molecule in its genome?

(a) Class I
(b) Class II
(c) Class III
(d) Class IV

Answer: (c)

169. Which of the following is an essential assumption for the Michelis-Menten derivation?

(a) V is considered only when [S]>>[P]; [S]>>[E]
(b) V is considered only when [P]>>[S], [E]>>[S] 0
(c) V is considered only when [S]>>[P]; [E]>>[S] 0
(d) V is considered only when [S]>>[P]; [S]=[E] 0

Answer: (a)

170. The characteristic earthy odour of soil is due to the presence of an odour-causing compound called geosmin. Which bacterial genus produces this compound?

(a) Nocardia
(b) Corynebacterium
(c) Mycobacterium
(d) Streptomyces

Answer: (d)

171. Which of the following types of infection (associated with parasitic organisms) is defined as a localized infection with a collection of pus surrounded by an inflamed area?

(a) Focal
(b) Sepsis
(c) Abscess
(d) Sporadic

Answer: (c)

172. Clostridium perfringens is a bacterial pathogen which lyses the host erythrocytes and thus causes anaemia. Which of the following chemicals is secreted by this pathogen?

(a) Porins
(b) Haemolysins
(c) Coagulase
(d) Collagenase

Answer: (b)

173. The bacterial chromosome is a _____ replicon.

(a) double
(b) triple
(c) single
(d) quadruple

Answer: (c)

174. In an interrupted mating experiment, it is seen that, after 5 minutes, the recipient is met + ; after 15 minutes, there is appearance of arg + , and after 10 minutes, the recipient is leu + . However, the recipient is almost never his + . Where, in the genome, is the ori of transfer?

(a) Between arg + and his +
(b) Between leu + and arg +
(c) Between his + and met +
(d) Between met + and leu +

Answer: (c)

175. Which of the following is a probiotic or[illegible]ism?

(a) Campylobacter
(b) E. coli
(c) Bifidobacterium
(d) Salmonella

Answer: (c)

176. Which of the following tools can be used for multiple sequence alignment?

(a) CLUSTALW
(b) BLAST
(c) RASMOL
(d) MOTIFSCAN

Answer: (a)

177. Which of the following gene transfer mechanisms involves viruses?

(a) Conjugation
(b) Transduction
(c) Transformation
(d) Electroporation

Answer: (b)

178. B represents the dominant allele and b represents the recessive allele of a pair. If Bb is crossed with bb, what percentage of progeny will be bb?

(a) 50%

(b) 0%

(c) 25%

(d) 75%

Answer: (a)

179. In which band of chromosome is constitutive heterochromatin found?

(a) G band

(b) A band

(c) C band

(d) R band

Answer: (c)

180. A species of cat in the Indian sub-continent follows Hardy-Weinberg population principles in determining skin colour. The dominant phenotype is represented by black skin colour, while the recessive phenotype is represented by grey skin colour. If half of the population carries the recessive allele, what percentage of cats have black skin colour? (Assume complete dominance.)

(a) 25%

(b) 75%

(c) 50%

(d) 60%

Answer: (b)

Discipline5

181. What would be the sequence of bases of an mRNA molecule that was transcribed from the sequence of DNA bases shown?
3′ – TCAGCTTAGCCTAGT – 5′

(a) 5′ – ACUAGGCUAAGCUGA – 3′

(b) 3′ – AGTCGAATCGGATCA – 5′

(c) 5′ – UCTUGGCUUUGCUGU – 3′

(d) 3′ – TCUGCTTUGCCTUGT – 5′

Answer: (a)

182. Which of the following eukaryotic RNA polymerases is responsible for the transcription of mRNA?

(a) RNA polymerase III

(b) RNA polymerase II

(c) RNA polymerase I

(d) Both RNA polymerase I and II

Answer: (b)

183. Haemophilia is a/an _____ genetic disorder.

(a) autosomal recessive
(b) X-linked dominant
(c) autosomal dominant
(d) X-linked recessive

Answer: (d)

184. To create contigs, we must have:

(a) two overlapping pieces of DNA
(b) two complimentary strands of DNA
(c) two unrelated pieces of DNA
(d) one DNA molecule and one RNA molecule

Answer: (a)

185. Microbes that grow on leaf surface are termed as:

(a) epiphytes
(b) endophytes
(c) rhizospheric
(d) phyllospheric

Answer: (d)

186. Which of the following types of chromosome abr nality leads to Down's syndrome?

(a) Deletion
(b) Translocation
(c) Inversion
(d) Aneuploidy

Answer: (d)

187. Which of the following is NOT a source of genetic variation?

(a) Inbreeding
(b) Mutation
(c) Gene flow
(d) Sex

Answer: (a)

188. Which of the following is NOT an endogenous trigger of the RNAi pathway?

(a) Aberrant transcripts from repetitive sequences
(b) Pre-micro RNA
(c) Antisense RNA
(d) dsRNA of viral origin

Answer: (c)

189. Which of the following genes required for Drosophila development produces a morphogen?

(a) Bicaudal gene

(b) Swallow gene

(c) Bicoid gene

(d) Exuperantia gene

Answer: (c)

190. Which of the following is NOT useful for host chromosome mapping?

(a) Generalised transduction

(b) Specialised transduction

(c) Conjugation

(d) Transformation

Answer: (b)

191. Which of the following combinations of dihedral bonds in peptide is NOT possible theoretically?

(a) φ = 180°, ψ = 90°, ω = 90°

(b) φ = −180°, ψ = 90°, ω = 0°

(c) φ = 180°, ψ = −90°, ω = 180°

(d) φ = −180°, ψ = −90°, ω = −180°

Answer: (a)

192. Proteins which appear to exist in an ensemble of uctures of approximately equal energy, that are in equilibrium, are termed as:

(a) dimorphic proteins

(b) metamorphic proteins

(c) polymorphic proteins

(d) globular proteins

Answer: (b)

193. You have estimated the percentage of cholesterol in four different types of bilayer membrane: L, M, N and O. The percentages are as follows:
L – 10%, M – 14%, N – 8%, O – 22%
Which of the following is the correct order in terms of increasing permeability of the bilayer to small water-soluble molecules?

(a) N < L < M < O

(b) L < N < O < M

(c) M < O < N < L

(d) O < M < L < N

Answer: (d)

194. Which of the following immunoglobulins is known to cross the placental barrier?

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

Answer: (b)

195. Which of the following transcription factors is a shoot apical meristem determinant?

(a) WUS
(b) CLV3
(c) CLV1
(d) WOX5

Answer: (a)

196. Which of the following is involved in the first carboxylation reaction during Calvin cycle?

(a) 1,3-Bisphosphoglycerate
(b) ATP
(c) Glyceraldehyde 3-phosphate
(d) Ribulose 1,5-bisphosphate

Answer: (d)

197. If a 1050 base pair closed-circular DNA molecule is nicked, underwound by two turns and then, the strands are joined (it becomes closed circular again), what will be the linking number of this new closed-circular DNA molecule? (Assume 10.5 base pairs per turn of the DNA molecule)

(a) 100
(b) 102
(c) 98
(d) 96

Answer: (c)

198. What is the diameter of the nucleosome structure of DNA?

(a) 300 nm
(b) 11 nm
(c) 30 nm
(d) 2 nm

Answer: (b)

199. To which hormone are early patterning events in plants related?

(a) Cytokinins
(b) Gibberellins
(c) Auxins
(d) Ethylene

Answer: (c)

200. Accumulation of genes into a single line or cultivar is termed as:

(a) backcrossing

(b) gene pyramiding

(c) pedigree breeding

(d) selfing

Answer: (b)

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

General Awareness

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

General English

63	**(b)**	64	**(a)**	65	**(c)**	67	**(b)**	68	**(c)**	69	**(a)**	70	**(a)**	71	**(a)**
72	**(a)**	74	**(c)**	75	**(b)**	76	**(a)**	77	**(b)**	78	**(c)**	79	**(c)**	80	**(b)**

Discipline1

101	**(b)**	102	**(c)**	103	**(b)**	104	**(c)**	105	**(c)**	106	**(a)**	107	**(c)**	108	**(c)**
109	**(c)**	110	**(d)**	111	**(d)**	112	**(c)**	113	**(c)**	114	**(b)**	115	**(d)**	116	**(c)**
117	**(a)**	118	**(b)**	119	**(a)**	120	**(a)**								

Discipline2

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

Discipline3

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

Discipline4

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

Discipline5

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