PREVIOUS YEAR PAPER

DSSSB Bacteriologist 2022 — 12 August 2022

DSSSB Other Posts · 12 August 2022

94 of the paper's 300 questions · +1 for a correct answer, −0.25 for a wrong one · 180 minutes

Left out of the original paper: 206 (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 12 August 2022. 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-2022-bacteriologist-12-aug/

General Awareness

1. The name of which south Indian festival comes from the Tamil word meaning ‘to boil’, referring to the dish of rice boiled in milk that is offered to Gods on that day?

(a) Thirayattam
(b) Onam
(c) Pongal
(d) Kaikottikali

Answer: (c)

2. Who decides the percentage of ‘Cash Reserve Rati CRR) in India?

(a) The State Bank of India
(b) Association of Banks of India
(c) The Finance Commission
(d) The Reserve Bank of India

Answer: (d)

3. According to the Fiscal Responsibility and Budget Management Act, 2003, the Central Government is obliged to take appropriate measures to reduce fiscal deficit to not more than what percentage of the GDP?

(a) Three percent
(b) Four percent
(c) Five percent
(d) Two percent

Answer: (a)

4. Common cold is caused by which of the following pathogens?

(a) Plasmodium
(b) Falciparum
(c) Rhino virus
(d) Salmonella typhi

Answer: (c)

5. About half of the Indian population lives in just five states. Identify the correct group of those states from the given options.

(a) Uttar Pradesh, Maharashtra, Bihar, West Bengal, and Andhra Pradesh
(b) Uttar Pradesh, Maharashtra, Bihar, West Bengal, and Rajasthan
(c) Punjab, Maharashtra, Bihar, West Bengal, and Rajasthan
(d) Uttar Pradesh, Karnataka, Bihar, West Bengal, and Rajasthan

Answer: (a)

6. The Great Leap Forward campaign was launched to boost the economy of which nation?

(a) Pakistan
(b) Sri Lanka
(c) Nepal
(d) China

Answer: (d)

7. Which of the following rivers is a part of the Bay of Bengal base of Indian drainage?

(a) Tapi
(b) Narmada
(c) Krishna
(d) Mahi

Answer: (c)

8. Who is often called as the Father of Indian Archae gy?

(a) BB Lal
(b) KK Muhammed
(c) R Nagaswamy
(d) Alexander Cunningham

Answer: (d)

9. The Mughals did not cherish their Mongol lineage on the maternal side. What was the name they rather referred themselves to with?

(a) Timurids
(b) Tughlaqs
(c) Shahs
(d) Khan-e-Khan

Answer: (a)

10. The debate about Hindi be used as the language of the constitution-making of India had caused a lot of commotion in the constituent assembly. Who among the following was one of the most vehement supporters of Hindi as a national language?

(a) A Rangaswamy
(b) Jawaharlal Nehru
(c) Hansa Mehta
(d) RV Dhulekar

Answer: (d)

11. Which book by Geetanjali Shree won her the International Booker Prize, 2022?
    (a) The Empty Space
    (b) Tirohit
    (c) Tomb of Sand
    (d) Khali Jagah
    Answer: (c)

12. Who was appointed as the Chief of the Indian Army Staff in 2022?
    (a) General Manoj Mukund Naravane
    (b) General Bipin Rawat
    (c) General Dalbir Singh Suhag
    (d) General Manoj Pande
    Answer: (d)

13. Which Indian singer was appointed as the Ambassador of Indo-UK culture platform?
    (a) AR Rahman
    (b) Sonu Nigam
    (c) Arijit Singh
    (d) Atif Aslam
    Answer: (a)

14. Which Indian state is to get WHO award for tobacco control 2022?
    (a) Bihar
    (b) Uttar Pradesh
    (c) West Bengal
    (d) Jharkhand
    Answer: (d)

15. Which of the following is exclusively under the Union list of the Constitution of India?
    (a) Criminal law
    (b) Contracts
    (c) Marriage and divorce
    (d) Foreign affairs
    Answer: (d)

16. Which of the following words is NOT mentioned in the Preamble to the Constitution of India?
    (a) JUSTICE
    (b) LIBERTY
    (c) SOVEREIGN
    (d) FEDERAL
    Answer: (d)

17. Which part of the Constitution has been referred to as the 'conscience' of the Indian Constitution?
(a) Directive Principles of State Policy
(b) Fundamental Rights
(c) Preamble
(d) Powers of the Judiciary

Answer: (b)

18. Who became the second Indian cricketer to score 10,000 runs in T20 matches?
(a) Virat Kohli
(b) KL Rahul
(c) Rohit Sharma
(d) Hardik Pandya

Answer: (c)

19. Which team won the Indian Premier League (IPL) 2022?
(a) Royal Challengers Bangalore
(b) Chennai Super Kings
(c) Mumbai Indians
(d) Gujarat Titans

Answer: (d)

20. What is the area of the playing surface of Table T is?
(a) 280 cm long and 150.5 cm wide
(b) 256 cm long and 122.5 cm wide
(c) 274 cm long and 152.5 cm wide
(d) 294 cm long and 172.5 cm wide

Answer: (c)

General English

81. From the given options choose the one that has used the correct preposition:
(a) The supervisor takes care for the school building.
(b) The supervisor takes care from the school building.
(c) The supervisor takes care of the school building.
(d) The supervisor takes care off the school building.

Answer: (c)

82. From the given options choose the one that is the correct indirect speech of the given sentence: He said, "The flood had destroyed their fields."
(a) He said that the flood had destroyed their fields.
(b) He says that the flood had destroyed the fields.
(c) He said that the flood has destroyed their fields.
(d) He said that the flood had destroyed their field's.

Answer: (a)

83. Which of the following sentences has used the correct form of verbs in the given sentence?

(a) If he eat all the chocolates, he will be ill.

(b) If he eats all the chocolates, he will be ill.

(c) If he ate all the chocolates, he will be ill.

(d) If he eaten all the chocolates, he will be ill.

Answer: (b)

86. From the options given fill in the blank with the most appropriate word.
Silkworms feed _____ mulberry leaves.

(a) in

(b) on

(c) with

(d) up

Answer: (b)

87. From the options given fill in the blank with the most appropriate word/words.
The dacoit _____ the bank and asked the cashier to _____ over the money.

(a) enters/hands

(b) entering /handing

(c) entered /hand

(d) entered /handed

Answer: (c)

88. From the options given below choose the one w correct sequence of words, framing a meaningful sentence:

(a) His car was long to old too complete th ney in time.

(b) His car was long too old to complete the journey in time.

(c) His car was to old too complete the long journey in time.

(d) His car was too old to complete the long journey in time.

Answer: (d)

89. From the options given choose the correct synonym of the given word.
Flaunt

(a) camouflage

(b) boast

(c) obscure

(d) stash

Answer: (b)

90. Fill in the blanks with the correct homonyms.
The gray squirrel wanted to _____ a _____ in the soil.

(a) bury; bury
(b) berry; berry
(c) bury; berry
(d) berry; bury

Answer: (c)

91. From the options given choose the one that has NO spelling error.

(a) literaly
(b) terminater
(c) vivecious
(d) engendered

Answer: (d)

92. From the options given choose the one that has a spelling error.

(a) bequeath
(b) coroborate
(c) convalesce
(d) animadvert

Answer: (b)

93. From the options given choose the one that mea .he same as the given idiom:
Nutty as a fruitcake

(a) An intelligent person
(b) An innocent person
(c) A crazy person
(d) A rich person

Answer: (c)

94. From the options given choose the one that means the same as the given idiom:
Pop One's Cork:

(a) To release one's anger
(b) Propose marriage
(c) Accusing someone of something of which you are also guilty
(d) To irritate or annoy someone very much.

Answer: (a)

95. From the options given below choose the correct one-word substitute for:
The sound that Parrots make:

(a) Chirp
(b) Screech
(c) Gaggle
(d) Hoot

Answer: (b)

100. Why is green tea a recommended power food?

(a) because green tea contains automated polyphenolic phytochemicals which are effective in releasing oxidative damage to cells.

(b) Green tea contains man-made polyphenolic phytochemicals which are effective in releasing oxidative damage to cells.

(c) Green tea contains synthetic polyphenolic phytochemicals which are effective in arresting oxidative damage to cells.

(d) because green tea contains natural polyphenolic phytochemicals which are effective in arresting oxidative damage to cells.

Answer: (d)

Discipline1

101. Which of the following chemical element is the backbone of all biochemical molecules including DNA, proteins, carbohydrates, fats etc.?

(a) Phosphorus

(b) Nitrogen

(c) Carbon

(d) Sulfur

Answer: (c)

102. Who used the technique of applying external pressure on the solution sufficiently to prevent osmosis?

(a) Berkeley and Hartley

(b) Ostwald and Meisner

(c) Henry and Raoult

(d) Payne and Buchner

Answer: (a)

103. What was the name of the first complete DNA genome sequenced by Frederick Sanger's group in 1977?

(a) φX104

(b) φX174

(c) φX94

(d) φX144

Answer: (b)

104. According to Le Chatelier's principle, the amount of adsorbate adsorbed at equilibrium decreases with increasing in which physical quantity?

(a) Temperature

(b) Frequency

(c) Density

(d) Volume

Answer: (a)

105. On what principle does the Ostwald viscometer generally work to measure the viscosity of Newtonian fluids?

(a) Navier's Law

(b) Arrhenius's Law

(c) Poiseuille's law

(d) Avogardro's law

Answer: (c)

106. Which of the following is a CORRECT statement regarding the principle of phosphorescence spectroscopy?

(a) When a molecule in the ground state (singlet) absorbs UV or visible radiations of the proper frequency, one electron passes into the vacant orbital present at a higher energy level.

(b) An external magnetic field is applied to force protons into two possible orientations which are not of equal energy.

(c) The quantity of light absorbed by a solution or free atoms at a certain wavelength.

(d) When light interacts with molecules in a gas, liquid, or solid, the vast majority of the photons are dispersed or scattered at the same energy as the incident photons.

Answer: (a)

107. Which of the following elements is highly toxic in its inorganic form which is naturally present in high levels in groundwater causing cancer and skin lesions?

(a) Arsenic

(b) Chromium

(c) Zinc

(d) Copper

Answer: (a)

108. What is the half-life of a naturally occurring radioisotope called Uranium-238, which is used for radiation shielding or as a projectile in armor-piercing weapons?

(a) 250 thousand years

(b) 12.32 million years

(c) 4.5 billion years

(d) 700 million years

Answer: (c)

109. When did Alfred Werner received the Nobel Prize in Chemistry for his research into the structure of coordination compounds?

(a) 1910

(b) 1913

(c) 1920

(d) 1923

Answer: (b)

110. Which of the following is a tricarboxylic acid that is propan-1-ol with hydrogen at each of the 3 carbon positions replaced by a carboxy group?

(a) Fumaric acid
(b) Maleic acid
(c) Lactic acid
(d) Isocitric acid

Answer: (d)

111. Which of the following is an opiate alkaloid isolated from the plant Papaver somniferum and produced synthetically?

(a) Morphine
(b) Atropine
(c) Nicotine
(d) Quinine

Answer: (a)

112. Who discovered the first vitamin named “fat-soluble A” with Marguerite Davis in 1913?

(a) Elmer McCollum
(b) Szent-Gyorgyi
(c) Casimir Funk
(d) Jack Cecil Drummond

Answer: (a)

113. Which RNA is transcribed from DNA and contai the genetic blueprint to make proteins?

(a) Transfer RNA (tRNA)
(b) Messenger RNA (mRNA)
(c) Ribosomal RNA (rRNA)
(d) Micro RNA (miRNA)

Answer: (b)

114. Which non-polar amino acid is synthesized in muscle by transamination of glucose-derived pyruvate, and released into the bloodstream?

(a) Aspartate
(b) Methionine
(c) Glycine
(d) Alanine

Answer: (d)

115. Who developed the "thermodynamic hypothesis" of protein folding in 1963 to explain the native conformation of amino acid structures?

(a) Frederick Sanger
(b) George Palade
(c) Christian Anfinsen
(d) Walter Kauzmann

Answer: (c)

116. Which of the most common blood tests is used to measure kidney function?

(a) Resting gated blood pool scan

(b) Serum alkaline phosphatase

(c) Glomerular filtration rate

(d) Glycated hemoglobin

Answer: (c)

117. Dicumarol is a naturally occurring competitive inhibitor that inhibits the recycling of which vitamin and causes their deficiency in the blood?

(a) Vitamin B-12

(b) Vitamin A

(c) Vitamin B6

(d) Vitamin K

Answer: (d)

118. Which coenzyme is involved in the stabilization of the carbanion at Cα of amino acids and plays an important role mainly in various amino acid biosynthesis and degradation pathways?

(a) Thiamine pyrophosphate

(b) Pyridoxal phosphate

(c) Biocytin

(d) Tetrahydrofolate

Answer: (b)

119. Which of the following is an important cofactor [illegible]ETC that acts as an electron acceptor for complex I and II and also acts as an antioxi[illegible]t in [illegible]ochondria and its membranes?

(a) Ubiquinone

(b) Prostaglandin

(c) Biocytin

(d) Plastoquinone

Answer: (a)

120. How many bones are there in the cranial bones that make up the cranial cavity, which surrounds the brain and serves as an attachment site for the muscles of the head and neck?

(a) six

(b) five

(c) nine

(d) eight

Answer: (d)

Discipline2

121. What is the name of the last enzyme involved in beta-oxidation of fatty acids that cleaves long chain fatty acyl-CoA to generate acetyl- CoA and shortened acyl-CoA?

(a) Thiolase
(b) Maltase
(c) Isomerase
(d) Amylase

Answer: (a)

122. In 1869, who isolated a material rich in phosphorus from the cells and called it nuclein?

(a) Rosalind Franklin
(b) Friedrich Miescher
(c) Erwin Chargaff
(d) Thomas Hunt Morgan

Answer: (b)

123. In 1958, Matthew Meselson and Franklin Stahl conducted an experiment by using which type of bacteria to study the replication of DNA?

(a) Agrobacterium tumefaciens
(b) Clostridium kluyveri
(c) Escherichia coli
(d) Listeria monocytogenes

Answer: (c)

124. Which of the following vector contains the gen or resistance to ampicillin and tetracycline, and can be increased with chloramphenicc

(a) pUC10
(b) YAC
(c) Ti plasmids
(d) pBR322

Answer: (d)

125. Which of the following denaturing reagent is commonly used to disrupt the secondary structure of RNA in Northern blotting technique?

(a) Formaldehyde
(b) Propylene glycol
(c) Sodium salicylate
(d) Urea

Answer: (a)

126. In the Gram staining method, which basic stain is used to color the Gram-negative bacteria red for easy identification?

(a) Crystal Violet

(b) Carbol fuchsin

(c) Safranin

(d) Methylene blue

Answer: (c)

127. In 1935, who purified tobacco mosaic virus and succeeded in extracting a fully active and infectious fine needle-like crystalline preparation?

(a) Heinz Fraenkel

(b) Wendell Stanley

(c) Dmitri Ivanowski

(d) Adolph Meyer

Answer: (b)

128. Which of the following is a bacteriostatic antibiotic whose mechanism of action is to stops bacterial growth by binding to the bacterial ribosome (blocking peptidyl transferase) and inhibiting protein synthesis?

(a) Chloramphenicol

(b) Amoxicillin

(c) Aztreonam

(d) Metronidazole

Answer: (a)

129. Which of the following group of interfer[illegible]duced by stimulation of sensitized lymphocytes with antigens or non-sensitized lymphocytes with mitogens?

(a) IFN-alpha

(b) IFN-gamma

(c) IFN-beta

(d) IFN-lambda

Answer: (b)

130. Which of the following is an autoimmune disease in which the body's immune system mistakenly attacks healthy cells, causing inflammation (painful swelling) in the affected parts of the body?

(a) Rheumatoid arthritis

(b) Psoriasis

(c) Graves' disease

(d) Myasthenia gravis

Answer: (a)

131. The two copies of myoglobin genes in human are _____.
(a) paralogs
(b) orthologs
(c) homologs
(d) xenologs
Answer: (a)

132. The parameter NOT deployed in RNA secondary structure prediction is:
(a) base pairing energy
(b) loop forming energy
(c) base stacking energy
(d) minimized free energy
Answer: (c)

133. 'Synteny' in comparative genomics refers to:
(a) Synonymous substitution rates of the sequences in comparison
(b) Synonymous vs nonsynonymous sequences in coding vs noncoding sequences
(c) Colinearity of gene order
(d) Similarity scores of sequences compared
Answer: (b)

134. Which one of the following is a nucleotide?
(a) deoxy adenosine
(b) deoxy guanosine
(c) cytidine
(d) uridylate
Answer: (d)

135. What is the standard deviation of a sampling distribution called?
(a) sampling error
(b) error mean squared
(c) standard error
(d) Simple error
Answer: (c)

136. Chloroform is mixed with phenol to purify DNA so that:
(a) it makes the phenol phase denser
(b) bacteria are lysed
(c) salts do not precipitate
(d) the culture is made aseptic
Answer: (a)

137. The region NOT required for converting wild type Ti plasmid to a transformation vector is:

(a) virulence genes
(b) border flanking sequences
(c) mannopine catabolism
(d) cytokinin

Answer: (c)

138. In chemical DNA synthesis:

(a) DNA is synthesized in the 3′to 5' orientation
(b) DNA is synthesized in the 5′to 3′ orientation
(c) many polymerases are involved
(d) dideoxy nucleotides are used

Answer: (a)

139. The architecture of tight junctions is critical for the proper functioning of _____.

(a) epithelia
(b) bone marrow
(c) leucocytes
(d) neurons

Answer: (a)

140. Duchenne muscular dystrophy is a muscle wasti disease found predominantly in boys. This indicates:

(a) the gene for the disease is dominant
(b) muscle wasting is prevented by fem nes
(c) the gene for the disease is X chromosome ked
(d) the gene for the disease is Y chromosome linked

Answer: (c)

Discipline3

141. The enzyme used for producing high fructose corn syrup is called:

(a) amylase
(b) isomerase
(c) invertase
(d) hydrolase

Answer: (b)

142. DEAE sephadex can be used in fractionation of plasma proteins. It is a _____.

(a) weak anion
(b) strong anion
(c) weak cation
(d) strong cation

Answer: (a)

143. Site directed mutation can be used for any of the following applications, EXCEPT:

(a) for rational protein design

(b) to prevent oxidative damage to an enzyme

(c) to add a methyl group to a gene

(d) to prevent phosphorylation of a protein

Answer: (c)

144. Live bacterial cells are best observed by _____ microscopy.

(a) bright field

(b) phase contrast

(c) Confocal

(d) Electron

Answer: (b)

145. Bacterial cell wall integrity is provided by:

(a) hemicellulose

(b) cellulose synthesis

(c) peptidoglycan

(d) chitin sheaths

Answer: (c)

146. Which of the following are NOT important in the f mation of antigen-antibody complexes?

(a) hydrophobic interactions

(b) electrostatic interactions

(c) covalent bonds

(d) hydrogen bonds

Answer: (c)

147. The major employment of genetically modified crops worldwide is with:

(a) herbicide resistance

(b) trypsin inhibitor

(c) beta carotene

(d) Bt toxin

Answer: (a)

148. Micro RNAs (miRNAs) could be used for gene silencing in plants. Under natural condition, miRNAs are:

(a) RNA viruses

(b) endogenous regulatory molecules

(c) derived from chromatin alteration

(d) derived from RNA polymerase alteration

Answer: (b)

149. Plant transformation vectors have the following key elements EXCEPT:

(a) marker for plasmid selection

(b) origin of replication

(c) retrotransposon activity

(d) T-DNA region

Answer: (c)

150. Bird flu is a threat to public health because:

(a) it comes from another country

(b) it may spread rapidly

(c) poultry industry will be badly affected

(d) the cost of medicines are very high

Answer: (b)

151. In India genetically engineered therapeutics are:

(a) banned for use

(b) very expensive

(c) approved by the Drug Controller General like for other drugs

(d) not produced

Answer: (c)

152. Goats could be genetically engineered to produc ilk containing muraminidase so that its milk could be:

(a) used to treat diarrhea

(b) having a longer shelf life

(c) processed at low temperature

(d) used in ice creams

Answer: (a)

153. The most suitable method for the diagnosis of metabolic diseases such as aminoacidopathies is:

(a) magnetic resonance imaging (MRI)

(b) ultrasonography

(c) chorionic villi sampling

(d) urine test

Answer: (d)

154. The ideal waste management strategy is to:

(a) follow the 5 R's

(b) feed animals

(c) incinerate to recover energy

(d) dump in oceans

Answer: (a)

155. The common component found both in natural gas and biogas is:
(a) carbon monoxide
(b) carbon dioxide
(c) methane
(d) propane
Answer: (c)

156. What is the utility of pollution?
(a) the consequential creation of goods and services
(b) reduced cost of goods
(c) introduction of innovative products
(d) creation of jobs
Answer: (a)

157. Tertiary wastewater treatment involves:
(a) use of activated sludge
(b) microfiltration
(c) methanation
(d) sedimentation
Answer: (b)

158. Nerve Growth Factor:
(a) is a steroid hormone
(b) is an endocrine signal
(c) helps axons to grow
(d) is found only in the hypothalamus
Answer: (c)

159. Growth of animal cells in culture could be measured by:
(a) gravimetric analysis of the cells
(b) turbidity measurement of the culture fluid
(c) electrophoresis of the cellular DNA
(d) counting in a hemocytometer following treatment with trypsin
Answer: (d)

160. Insulin analogs are in the market because:
(a) they are obtained from porcine cells
(b) they are less immunogenic
(c) they have improved response
(d) they aggregate well
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 Awareness

1	**(c)**	2	**(d)**	3	**(a)**	4	**(c)**	5	**(a)**	6	**(d)**
7	**(c)**	8	**(d)**	9	**(a)**	10	**(d)**	11	**(c)**	12	**(d)**
13	**(a)**	14	**(d)**	15	**(d)**	16	**(d)**	17	**(b)**	18	**(c)**
19	**(d)**	20	**(c)**								

General English

81	**(c)**	82	**(a)**	83	**(b)**	86	**(b)**	87	**(c)**	88	**(d)**
89	**(b)**	90	**(c)**	91	**(d)**	92	**(b)**	93	**(c)**	94	**(a)**
95	**(b)**	100	**(d)**								

Discipline1

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

Discipline2

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

Discipline3

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