c. Productive system
d. None

55. Which one of the following is true about Anabaena?

a. Principal algal community
b. A blue-green algae
c. Association with coralloid roots of cycas
d. All

56. CIMMYT is

a. International Crop Research Institute
b. National Crop Research Institute
c. International Institute of Vegetables Yield and Training
d. All

57. CIMMYT in Mexico deals with two crops which are widely grown in India

a. Maize and wheat
b. Wheat and rice
c. Rice and maize
d. Maize and jowar

58. Name of the fertilizer occupies first position in India is

a. Urea b. DAP
c. Ammonium sulphate
d. Calcium ammonium nitrate

59. Which one of the following forms of potassium present in soil would one test for evaluate the fertility of soil?

a. Total K
b. Water soluble K
c. K held in the silt
d. Exchangeable K

60. Match the column A and column B

Col. A (Classes of fertilizers)	*Col. B (Example of different classes)*
A. Organic fertilizer	i. Urea
B. Inorganic fertilizer	ii. Isobutylidene diurea
C. Biofertilizers	iii. Ammonium sulphate
D. S RF	iv. 2-chloro-6-pyridine

a. A-i, B-iii, C-iv, D-ii
b. A-i, B-ii, C-iv, D-iii
c. A-i, B-iv, C-iii, D-ii
d. A-i, B-iv, C-iv, D-ii

61. The ill effects of submergence of roots of deciduous fruit plants in water for very long time, is due to primarily to

a. Deficiency of nutrients
b. Lack of aeration
c. Poor absorption
d. Excess of moisture

62. In relation to crop rotation which one of the following is odd one?

a. Heavy feeders should be followed by low feeders
b. Deep rooted crops should be followed by same type of crop
c. Legumes may be followed by non-legumes crops
d. Vegetables area susceptible to a particular pest should be followed by resistant crops

63. The optimum cardinal temperature points for germination of rice seeds are

a. 30–32°C b. 37–39°C
c. 40–45°C d. 30–45°C

64. Match the following in both columns

Col. A	**Col. B**
A. Humus	i. Insoluble in dilute acid
B. Humic acid	ii. High molecular weight
C. Fulvic acid	iii. Insoluble in dilute alkali
D. Humin	iv. Lignoprotein complex

a. A-i, B-ii, D-iii b. A-ii, B-i, D-iii
c. A-iii, B-ii, C-i d. None

65. Match the list A (micronutrient) and list B (typical deficiency symptoms)

List A	**List B**
A. Mn	i. Reclamation disease of cereals
B. Mo	ii. White bud of maize

186. Secondary walls in plant cells show deposition of

a. Lignin b. Pectin
c. Cellulose d. Suberin

187. Which is not a non-protoplasmic cell inclusion

a. Raphides b. Starch grain
c. Ribosome d. Cytolith

188. A cystolith is a deposit of

a. Calcium citrate
b. Calcium carbonate
c. Silica d. Calcium oxalate

189. The technique which is used to find out the pathway of the synthesis of a substance in a cell is known as

a. Autoradiography
b. Chromatography
c. Spectrophotometry
d. Cell fractionation

190. The process by which middle lamella is removed by treating the plant cells with strong acids is known as

a. Lignification b. Cutinization
c. Maceration d. Suberization

191. Meristematic cells usually consist of

a. Primary cell wall
b. Secondary cell wall
c. Tertiary cell wall
d. All of the above

192. Out of proteins, lipids and carbohydrates present in a cell membrane, what is true?

a. Carbohydrates are minimum
b. Carbohydrates are maximum
c. Lipids are minimum
d. All the three are in equal proportion

193. Engulfment of solid food particle of larger size by the plasma membrane is known as

a. Endocytosis b. Pinocytosis
c. Phagocytosis d. Ephagy

194. Osmosis stops when

a. Solutions become isotonic
b. Water concentration becomes equal
c. External solution is hypotonic
d. External solution is hypertonic

195. Plasma membrane particularly in animal cells is elastic due to

a. Lipids b. Proteins
c. Carbohydrates d. None of the above

196. Which among the following has only DNA, but no histones in its chromosome?

a. Anabena b. Volvox
c. Chlamydomonas
d. Yeast

197. The term phragmoplast is associated with

a. Cell elongation
b. Division of nucleus
c. Cytokinesis d. Karyokinesis

198. A solution whose osmotic concentration is greater than the cell sap is known as

a. Hypotonic b. Isotonic
c. Hypertonic d. None

199. Active transport is affected by

a. Cold b. Cyanide
c. Absence of oxygen
d. All of the above

200. Plasma membrane is more permeable to

a. Polysaccharides b. Proteins
c. Glycoproteins **d. Phospholipids**

c. Incineration
d. Leaching

145. Which of the following is an example of a weed of rabi season that infest wheat crop?

a. Chenopodium b. Motha
c. Jangali jowar d. None of the above

146. First bioinsecticide developed commercial scale was

a. Quinine b. DDT
c. Organophosphate
d. Sporeine

147. Composted manure is produced from

a. Farmyard manure and green manure
b. Farm refuse and household refuse
c. Organic remains of biogas plants
d. Rotten vegetables and animal refuse

148. Norin-l0 gene from Japan is a

a. Dwarf gene of wheat
b. Dwarf gene of rice
c. Dwarf gene of maize
d. Disease resistant gene of rice

149. Aims of plant breeding are to produce

a. Disease-free varieties
b. High-yielding varieties
c. Early-maturing varieties
d. All of the above

150. Growing of two or more crops simultaneously on the same piece of land is called

a. Mixed cropping
b. Mixed farming
c. Intercropping
d. Fanning

151. The Mexican dwarf wheat variety was developed by

a. Swaminathan **b. Borlaugh**
c. Watson d. Khush

152. The desired varieties of economically useful crops are raised by

a. Vernalisation
b. Mutation
c. Natural selection
d. Hybridisation

153. High-yielding varieties of wheat were primarily developed by Indian scientist by crossing- breeding traditional varieties with

a. American varieties
b. Mexican varieties
c. European varieties
d. African varieties

154. A Plant breeder: Waists to develop a disease resistant variety. What should he do first?

a. Hybridisation
b. Mutation
c. Selection
d. Production of crop

155. Selection of homozygous plant is

a. Pure line selection
b. Mass selection
c. Mixed selection
d. Introduction

156. What element forms the skeleton of organic molecules?

a. Hydrogen atoms
b. Phosphate atoms
c. Carbon atoms
d. Water molecules

157. How many bonds can carbon atoms form?

a. Two **b. Four**
c. One d. Three

158. What happens in a dehydration reaction?

a. Molecules are broken apart
b. Monomers are bonded together and a water molecule is released
c. Atoms are joined
d. It depends on what molecule it is

159. What reactions break apart polymers?

a. Hydrolysis reactions
b. Dehydration reactions
c. Neutralization reactions
d. Catalytic reactions

83. Viral genome that can become integrated into bacterial genome is called

a. Prophage
b. Temperate phage
c. Bacteriophage
d. Metaphage

84. Cytochromes are

a. Oxygen acceptors
b. ATP acceptors
c. Electron acceptors
d. Protein acceptors

85. The cells having F plasmid in the chromosomes were termed as

a. Hfr b. F^-
c. Hbr d. C^+

86. Recombination process occurring through the mediation of phages is

a. Conjunction **b. Transduction**
c. Transformation d. Transfection

87. Mordant used in grams staining is

a. Crystal violet **b. Iodine**
c. Saffranine d. All of these

88. Parasitic form must contain

a. Capsule b. Cell wall
c. Endospores d. Flagella

89. Gram staining is an example for

a. Simple staining
b. Differential staining
c. Negative staining
d. None of these

90. Following cocci are non-motile *except*

a. Staphylococcus
b. Meningococcus
c. Gonococcus
d. *Rhodococcus agilis*

91. *Aspergillus fumigatus* can infect

a. Birds **b. Animal**
c. Man d. All of them

92. Enterotoxin responsible for food poisoning is secreted by

a. Enterococci
b. *Entamoeba histolytica*
c. Enterobacteriaceae
d. Straphylococci

93. Autolysis is done by

a. Mitochondria **b. Lysosome**
c. Golgi bodies d. Peroxisomes

94. A facultative anaerobic is

a. Only grow anaerobically
b. Only grow in the presence of O_2
c. Ordinarily an anaerobe but can grow with O_2
d. Ordinarily an aerobe but can grow in absence of O_2

95. The per centage of O_2 required by moderate anaerobe is

a. 0% b. <0.5%
c. 2–8% d. 5–10%

96. Interferon is formed by

a. Lymphocytes b. Lymphoblast
c. Fibroblasts **d. All of these**

97. Pigment bearing structure of bacteria are

a. Mesosomes
b. Plasmids
c. Mitochondria
d. Chromospheres

98. Spirochete is

a. Gonococci
b. Staphylococci
c. *Treponema palladium*
d. Streptococci

99. Histones are found in

a. Prokaryotes **b. Eukaryotes**
c. Viruses d. None of these

100. Cell wall of gram-negative bacteria is

a. Thick
b. Lipids are present
c. Teichoic acids are absent
d. None of these

101. Cytoplasmic streaming is present in

a. Prokaryotes b. Animals
c. Eukaryotes d. Both a and b

174. Parasitic form must contain

a. Capsules b. Cell wall
c. Endospores d. Flagella

175. The total number of genes in the group of same individuals is

a. Genome b. Gene map
c. Gene pool d. None of these

176. Transformation was observed mainly in

a. Bacteriophages
b. Temperate phages
c. λ-phage
d. All of these

177. Capsulated forms of bacteria are

a. Virulent b. Avirulent
c. Useful d. Symbiotic

178. The bacterial cells participating in conjugation are

a. Conjugants b. Fertile cells
c. Exconjugants d. None of these

179. Phagocytes are

a. Monocytes b. Macrophages
c. Basophils **d. All of these**

180. The microorganism engulfed by phagocyte resides in a vacuole is known as

a. Phagosome b. Lysosome
c. Both a and b d. None of these

181. Toxic products in phagolysosome are

a. H_2SO_4 b. Singlet O_2
c. Superoxide radicals
d. All of these

182. During destruction of antigen particle in phagolysosome the product formed during formulation is

a. Acetic acid **b. Lactic acid**
c. Citric acid d. None of these

183. The coating of a bacterium with antibody or complement that leads to enhanced phagocytosis of the bacterium by phagocytes is called

a. Opsonisation
b. Agglutination
c. CFT d. None of these

184. Attenuation means

a. Killing of the bacteria (microorganism)
b. Inactivation of bacteria
c. More activating the bacteria
d. Both 1 and 2

185. Infection that results in pus formation are called

a. Focal infection
b. Acute infection
c. Pyogenic infection
d. Chronic infection

186. Presence of viable bacteria in the blood stream is called

a. Viraemia b. Septicemia
c. Bacteraemia d. Bactericidal

187. Presence of viruses in the blood stream is known as

a. Viraemia b. Bacteraemia
c. Septicemia d. Pyemia

188. Opsonin is the

a. Cell wall component
b. Plasma component
c. Serum component
d. Cytoplasm component

189. β-haemolytic bacteria is

a. *Streptococcus pyrogenes*
b. *Str. pneumoniae*
c. *Str. viridans*
d. *Str. faecalis*

190. The natural reservoir of infection for cholera is

a. Flies b. Horse
c. Man d. None of these

191. Main cause for cholera is

a. Poverty and insanitation
b. Mosquitoes
c. Toxin produced by pesticides
d. None of these

192. *Vibrio cholerae* differs from Vibrio El Tor by

a. It shares some Inaba, Ogawa subtypes with El Tor

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