TDC-I

BOTANY HONOURS (PAPER –I)

GROUP-A (200)

Cell structure and cell division

1. Who discovered cell

   a. Robert Hooke b. Robert Brown c. Leeuwnhoek d. Virchow

2. Cell theory was formulated by

   a. Hooke & Schwann b. Virchow & Schleiden

   c. Schleiden & Scwann d. Leeuwenhoek & Brown

3. The idea that new cells arise from division of pre-existing cells was given by

   a. Leeuwnhoek b. Virchow c. Purkinje d. Schleiden

4. "Omnis cellula-e- cellula" means that

   a. plants and animals are composed of cells

   b. cell is the basic unit of life

   c. new cells arise from division of pre-existing cells

   d. new cells are not formed by division

5. Which of the following is common in prokaryotic and eukaryotic cells

   i. ribosome ii. nucleus iii. cell membrane iv. Golgi body

   a. i, ii b. i, iii c. i, iv d. i, iii, iv

6. Ribosomes is present in

   a. cytoplasm b. chloroplasts c. mitochondria d. all

7. Which of the following organelle is not surrounded by a membrane

   a. ribosome b. peroxisome c. lysosome d. Golgi body

8. Choose the correct statement

   a. the shape of the cells may be determined by the function the cells

   b. the shape of the cells is not determined by the function the cells

   c. the size of the cells may be determined by the function the cells

   d. both a & c

9. Prokaryotes do not have a well defined

a. nucleus b. ribosome c. cell membrane d. all

10. In the cell membrane, the lipids are arranged in

a. single layer b. bilayer c. trilayer d. micelles

11. Choose the correct statement regarding cell membrane

i. ratio of protein and lipid varies in different cell types

ii. ratio of protein and lipid is fixed in all cell types

iii. in addition to proteins and lipids, cell membrane also contains some carbohydrate

iv. in the membrane, the polar heads of lipids are arranged towards the inner side

a. i, iii b. ii, iii, iv c. ii, iii d. i, iii, iv

12. In the membrane, the lipids are arranged as a ---------- with the ---------- heads towards the ---------- side

a. bilayer, non-polar, outer b. bilayer, non-polar, inner

c. monolayer, polar, outer d. bilayer, polar, outer

13. What is true about cell membrane

a. peripheral proteins are buried in lipid bilayer and can be easily extracted from membrane

b. peripheral proteins are buried in lipid bilayer and can not be easily extracted from membrane

c. peripheral proteins lie on surface of lipid bilayer and can be easily extracted from membrane

d. peripheral proteins lie on surface of lipid bilayer and can not be easily extracted from membrane

14. What is true about cell membrane

a. integral proteins are buried in lipid bilayer and can be easily extracted from membrane

b. integral proteins are buried in lipid bilayer and can not be easily extracted from membrane

c. integral proteins lie on surface of lipid bilayer and can be easily extracted from membrane

d. integral proteins lie on surface of lipid bilayer and can not be easily extracted from membrane

15. Singer and Nicolson proposed a model of ---------- known as the ----------

a. DNA, double helix b. cell membrane, unit membrane

c. cell wall, fluid mosaic d. cell membrane, fluid mosaic

16. The cell membrane is

a. permeable b. semi-permeable c. selectively permeable d. quasipermeable

17. Which of the following is responsible for the fluid nature of the cell membrane

a. lipid b. carobohydrate c. protein d. all

18. Cytoplasm of neighbouring plant cells are interconnected through

a. stomata b. plasmodesmata c. desmosome d. nexus

19. The main component of middle lamella is

a. calcium pectate b. calcium carbonate

c. calcium oxalate d. magnesium pectate

20. Which of the following is not a component of the endomembrane system

a. mitochondria b. plastids c. peroxisome d. all

21. Plant cell wall may be traversed by

a. desomosome b. nexus c. stomata d. plasmodesmata

22. Growth of the plant cell stops when

a. middle lamella is formed b. primary wall is formed

c. secondary wall is formed d. none

23. Neighbouring plant cells are held together by

a. middle lamella b. primary wall c. secondary wall d. plasmodesmata

24. Which of the following is a component of the endomembrane system

i. endoplasmic reticulum ii. Golgi body iii. lysosome iv. ribosome

a. i b. i, ii c. i, ii, iii d. i, ii, iii, iv

25. Rough endoplasmic reticulum has ---------- attached on its ----------surface

a. peroxisomes, outer b. peroxisomes, inner

c. ribosomes, outer d. ribosomes, inner

26. Which of the following divides intracellular space into two compartments

a. Golgi body b. peroxisome c. endoplasmic reticulum d. nucleus

27. Which of the following cell structure is named after its discoverer

a. lysosome b. mitochondria c. Golgi body d. cilium

28. Which of the following is not included in the endomembrane system

i. ribosome ii. peroxisome iii. centrosome iv. Golgi body

a. i b. i, iii c. i, ii, iii d. iv

29. Which of the following is not surrounded by a membrane

i. centriole ii. ribosome iii. nucleolus iv. peroxisome

a. i b. i, ii c. i, ii, iii d. i, ii, iii, iv

30. Disc shaped flattened sac like structures present in Golgi body are called

a. cristae b. thyllakoid

c. lamellae d. cisternae

31. Choose the correct statement

a. cis face of the Golgi body is concave and called forming face

b. cis face of the Golgi body is concave and called maturing face

c. cis face of the Golgi body is convex and called forming face

d. cis face of the Golgi body is convex and called maturing face

32. Choose the correct statement

a. trans face of the Golgi body is concave and called forming face

b. trans face of the Golgi body is concave and called maturing face

c. trans face of the Golgi body is convex and called forming face

d. trans face of the Golgi body is convex and called maturing face

33. Who made the statement "Omnis cellula-e-cellula"

a. Robert Hooke b. Robert Brown c. Virchow d. Schwann

34. A protein is synthesized to be transported outside the cell and is glycosylated before transport. Which of the following organelles will be involved in the entire process

a. endoplasmic reticulum, Gogi body

b. peroxisome, endoplasmic reticulum, Gogi body

c. ribosome, endoplasmic reticulum, Gogi body

d. endoplasmic reticulum, Gogi body, lysosome

35. Which of the following organelles is rich in hydrolytic enzymes

a. peroxisome b. glyoxysome c. centrosome d. lysosome

36. The term tonoplast is used for the membrane surrounding the

a. peroxisome b. peroxisome c. vacuole d. vacuole

37. What is true about lysosomes

i. they are formed by the Gogi body

ii. they are formded by ER

iii. they have hydrolytic enzymes active at acidic pH

iv. they have hydrolytic enzymes active at alkaline pH

a. i, iv b. ii, iii c. ii, iv d. i, iii

38. Electron transport system is located in

a. the outer membrane of the mitochondria

b. inner membrane of mitochondria

c. outer chamber of mitochondria

d. inner chamber of mitochondria

39. Choose the correct statement

i. mitochondria are surrounded by double membrane

ii. mitochondria are surrounded by single membrane

iii. the number of mitochondria varies in a cell with its physiological state

iv. mitochondria are usually sausage shaped or cylindrical

a. i, iv b. ii, iii c. ii, iv d. i, iii, iv

40. Choose the correct statement

i. cristae increase the surface area of the outer membrane of the mitochondria

ii. cristae increase the surface area of the inner membrane of the mitochondria

iii. the mitochondria increase in number by formation of new mitochondria by the ER

iv. the mitochondria increase in number by the division of existing mitochondria

a. i, iv b. i, iii c. ii, iii d. ii, iv

41. Which of the following ribosome is present in mitochondria

a. 80 S b. 70 S c. 60 S d. 50 S

42. Choose the correct statement

a. mitochondria have a single circular DNA molecule

b. mitochondria have a single linear DNA molecule

c. mitochondria have several circular DNA molecules

d. mitochondria have several linear DNA molecules

43. Which of the following structure is associated with the power house of the cell

a. grana b. cisternae c. cristae d. thylakoid

44. Which of the following is the site of aerobic respiration in a cell

a. mitochondria b. plastids c. peroxisome d. endoplasmic reticulum

45. Which of the following is the power house of a cell

a. mitochondria b. plastids c. peroxisome d. endoplasmic reticulum

46. What is the right combination for mitochondria

a. circular DNA, 70 S ribosome b. linear DNA, 70 S ribosome

c. circular DNA, 80 S ribosome d. linear DNA, 80 S ribosome

47. Which of the following is a colourless plastid

a. chloroplast b. chromoplast c. leucoplast d. bioplast

48. Which of the following plastids stores protein

a. amyloplast b. aleuroplast c. elaioplast d. all

49. Which of the following plastids stores oil and fat

a. amyloplast b. aleuroplast c. elaioplast d. none

50. Which of the following plastids stores starch

a. amyloplast b. aleuroplast c. elaioplast d. bioplast

51. Which of the following is surrounded by double membrane

a. mitochondria b. chloroplast c. nucleus d. all

52. Which of the following is surrounded by a single membrane

a. nucleolus b. centriole c. ribosome d. none

53. In the chloroplast, the chlorophyll pigments are present in the

a. outer membrane b. thylakoids c. stroma d. inner membrane

54. Which of the following types of ribosome is present in the chloroplasts

a. 50 S b. 60 S c. 70 S d. 80 S

55. What is true about chloroplasts

a. they contain a single large circular DNA molecule

b. they contain a single large linear DNA molecule

c. they contain several small circular DNA molecules

d. they contain several small linear DNA molecules

56. In a chloroplast, several thylakoids arrange in stacks called

a. grana b. cisternae c. stroma d. cristae

57. Which of the following structures facilitates transport of substances in and out of a vacuole

a. tonoplast b. axoneme c. cisternae d. matrix

58. The term axoneme is associated with

i. cilia ii. flagella iii. fimbrae iv. pili

a. i b. i, ii c. i, ii, iii d. i, ii, iii, iv

59. In the eukaryotic cilium or flagellum, the arrangement of ---------- in the ---------- is --------

a. microfilaments, axoneme, 9+2 b. microfilaments, basal body, 9+0

c. microtubules, basal body, 9+4 d. microtubules, axoneme, 9+2

60. In a cilium we can observe ---------- radial spokes

a. 5 b. 7 c. 9 d. 11

61. In a cilium there are

i. nine peripheral doublets of microtubules ii. nine inter-doublet bridges

iii. nine radial spokes iv. one central sheath

a. i b. i, ii c. i, ii, iii d. i, ii, iii, iv

62. In a centriole, the peripheral fibrils are in

a. doublet b. triplet c. quadruplet d. none

63. Nucleus was discovered by

a. Virchow b. Robert Brown

c. Fontana d. Robert Hooke

64. The term perinuclear space is used for

a. the space occupied by the nucleus in the cell

b. the space occupied by the nucleolus in the nucleus

c. the space between the two nuclear membranes

d. the space around the nuclear pores

65. Chromatin contains DNA and ---------- protein called ----------

a. acidic, tubulin b. basic, tubulin c. basic, histone d. acidic, histone

66. Which of the following chromosomes will have two equal arms

a. metacentric b. sub-metacentric c. acrocentric d. telocentric

67. Terminal centromere is present in ---------- chromosome

a. metacentric b. sub-metacentric c. acrocentric d. telocentric

68. The small fragment of chromosome present after the secondary constriction is called

a. satellite b. telomere c. kinetochore d. nucleolar organizer

69. In a chlororplast, light reactions take place in

a. stroma b. grana c. outer membrane d. inner membrane

70. In a chlororplast, dark reactions take place in

a. stroma b. grana c. outer membrane d. inner membrane

71. Choose the correct statement

i. G0 stage is called the quiescent stage of cell cycle

ii. G0 stage is called the nascent stage of the cell cycle

iii. Interphase is called the resting phase of cell cycle

iv. DNA synthesis takes place during S phase of interphase

a. i, iii b. ii, iii, iv c. i, iii, iv d. ii, iii

72. The cells that do not divide further, exit ---------- to enter an inactive phase called ----------

a. G2, G0 b. G1, G3 c. G2, G3 d. G1, G0

73. The phase corresponding to the interval between mitosis and initiation of DNA replication is

a. G0 b. G1 c. G2 d. S

74. The phase after the S phase in interphase is called

a. G0 b. G1 c. G2 d. G3

75. If an onion cell (2n=16) is undergoing mitosis, the number of chromosomes observed in the cell at metaphase stage will be

a. 8 b. 16 c. 32 d. 18

76. If an onion cell (2n=16) is undergoing mitosis, the number of chromosomes observed in the cell at anaphase stage will be

a. 8 b. 16 c. 32 d. 18

77. If an onion cell (2n=16) is undergoing meiosis, the number of bivalents observed in the zygotene stage will be

a. 4 b. 8 c. 16 d. 32

78. If an onion cell (2n=16) is undergoing meiosis, the number of tetrads observed in the pachytene stage will be

a. 8 b. 16 c. 32 d. 18

79. The amount of DNA (2C) of a diploid cell undergoing mitosis will be

a. 4C in G0 b. 4C in G1 c. 4C in G2 d. all

80. DNA replication takes place in

a. G0 phase b. G1 phase c. G2 phase d. S phase

81. Condensation of chromosomes is completed by which stage of mitosis

a. prophase b. metaphase c. anaphase d. telophase

82. The complete breakdown of nuclear membrane during cell division marks the beginning of

a. prophase b. metaphase c. anaphase d. telophase

83. At metaphase of mitosis, each chromosome has ---------- chromatid and ---------- kinetochore

a. one, one b. one, two c. two, one d. two, two

84. During mitosis, the site of attachment of spindle fibres to the chromosome is

a. centromere b. telomere c. kinetochore d. secondary constriction

85. In mitotic metaphase

i. whole chromosome is attached to the spindle fibre

ii. chromosomes come to lie at the equator

iii. chromosomes get connected to the spindle fibres by their kinetochores

iv. nuclear membrane begins to disappear

a. i, ii, iii, iv b. i, ii, iii c. i, ii d. ii, iii

86. Chromosomes move to equator in

a. prophase b. metaphase c. anaphase d. telophase

87. Centromeres split and chromatids separate in which stage of mitosis

a. prophase b. metaphase c. anaphase d. telophase

88. The stage of mitosis in which spindle fibres attach to kinetochores of chromosomes

a. prophase b. metaphase c. anaphase d. telophase

89. In anaphase stage of mitosis

i. each chromosome moves towards the equatorial plate

ii. each chromosome moves away form the equatorial plate

iii. during anaphasic movement of chromosome, the centromere is towards the pole

iv. during anaphasic movement of chromosome, the centromere is towards equatorial plate

a. i, iv b. ii, iii c. i, iii d. ii, iv

90. In which stage of mitosis decondensation of chromosomes takes place

a. prophase b. metaphase c. anaphase d. telophase

91. Which of the following events take place during telophase of mitosis

i. chromosomes cluster at opposite spindle poles

ii. nuclear envelope begins to form

iii. reformation of nucleolus takes place

iv. chromosome starts decondensation

a. i, ii b. i, ii, iii c. i, ii, iii, iv d. ii, iii, iv

92. Which of the following two stages of mitosis can be considered reverse of one another

a. anaphase, metaphase b. prophase, telophase

c. prophase, metaphase d. anaphase, telophase

93. Which is the first stage of meiosis-I

a. leptotene b. zygotene c. pachytene d. diplotene

94. We can observe synaptonemal complex in

a. prophase of mitosis b. prophase-I of meiosis

c. metaphase-I of meiosis d. prophase-II of meiosis

95. Pairing of homologous chromosomes is called ---------- and takes place in ----------

a. synapsis, zygotene b. syanpsis, pachytene

c. syngamy, zygotene d. syngamy, pahcytene

96. Homologous chromosomes begin to pair in the -------- stage and begin to separate in ------- stage

a. leptotene, zygotene b. pahcytene, diakinesis

c. zygotene, diakinesis d. zygotene, diplotene

97. The recombination nodules appear in

a. leptotene b. zygotene c. pachytene d. diakinesis

98. Formation of bivalent in meiosis takes place in

a. leptotene b. zygotene c. pachytene d. diakinesis

99. Recombination of genetic material in meiosis is a result of

a. synapsis b. formation of chiasmata

c. terminalisation of chiasmata d. crossing over

100. In which stage of meiosis synapsis takes place

a. leptotene b. zygotene c. pachytene d. diakinesis

101. In which stage of meiosis crossing over takes place

a. leptotene b. zygotene c. pachytene d. diakinesis

102. Recombination nodules appear

a. leptotene b. zygotene c. pachytene d. diakinesis

103. In which stage of meiosis, synaptonemal complex is formed

a. diplotene b. zygotene c. pachytene d. diakinesis

104. In which stage of meiosis, terminalisation of chiasmata begins

a. leptotene b. zygotene c. pachytene d. diakinesis

105. In which stage of meiosis, separation of homologous chromosomes takes place

a. pachytene b. diakinesis c. anaphase-I d. anaphase-II

106. In which stage of meiosis, separation of sister chromatids takes place

a. pachytene b. diakinesis c. anaphase-I d. anaphase-II

107. Choose the correct statements regarding meiosis

a. crossing over takes place between sister chromatids

b. crossing over takes place between non-sister chromatids

c. recombination nodules result in crossing over

d. both b & c

108. In meiosis-I, nucleolus disappears in

a. leptotene b. pachytene c. diplotene d. diakinesis

109. In meiosis-I, nuclear membrane disappears in

a. leptotne b. pachytene c. diplotene d. diakinesis

110. Which of the following do not happen during mitosis

i. separation of homologous chromosomes

ii. separation of sister chromatids

iii. pairing of homologous chromosomes

iv. formation of chiasmata

a. i, iii, iv b ii, iii, iv c. i, ii, iii d. iii, iv

111. The site where crossing over has taken place is called

a. recombination nodule b. chiasma c. centromere d. telomere

112. Choose the correct statement

i. meiosis-I resembles mitosis

ii. meiosis-II resembles mitosis

iii. chromosome number is reduced to half in meiosis-I

iv. chromosome number is reduced to half in meiosis-II

a. i, iii b ii, iii c. i, iv d. ii, iv

113. Chromosomes move to equator in

a. prophase b. metaphase c. anaphase d. telophase

114. Name the stage in which centromere splits and chromatids separate

a. prophase b. metaphase c. anaphase d. telophase

115. Name the stage in which pairing between homologous chromosomes takes place

a. prophase-I b. prophase-II c. anaphase-I d. anaphase-II

116. Name the stage in which crossing over between homologous chromosomes takes place

a. prophase-I b. prophase-II c. anaphase-I d. anaphase-II

117. Choose the correct statements

i. meiosis increases genetic variability

ii. meiosis decrease genetic variability

iii. meiosis must take place during sexual reproduction

iv. meiosis may also take place during asexual reproduction

a. i, iii, iv b. ii, iii, iv c. i, iii d. iii, iv

Cyanobacteria cell and Algae

118. What is true about cyanobacteria

a. chlorophyll 'a' is present b. chlorophyll 'b' is present

c. chlorophyll 'c' is present d. chlorophyll a & b are present

119. Cyanobacteria lack

a. nucleus b. flagellated stage c. plastids d. all

120. In cyanobacteria

a. photosynthetic pigments are located in chromatophore

b. some cyanobacteria can fix nitrogen

c. c-phycocyanin and c-phycoerythrin are present

d. all

121. Which of the following is a wrong statement regarding algae

a. algae are chlorophyll bearing b. algae are autotrophic

c. algae are thalloid d. algae are aquatic only

122. Zoospores are ---------- and method of ---------- reproduction

a. flagellate, vegetative b. flagellate, asexual

c. flagellate, sexual d. Non-flagellate, asexual

123. Anisogamous sexual reproduction means that

a. zygote divides into two unequal cells

b. zygote divides into two equal but dissimilar cells

c. two dissimilar gametes fuse together

d. two similar gametes fuse together

124. Which of the following algae are used as food

a. *Laminaria* b. *Sargassum* c. *Porphyra* d. all

125. Which of the following is a red alga and used as food

a. *Laminaria* b. *Sargassum* c. *Porphyra* d. *Polysiphonia*

126. Which of the following algae is marine

a. *Nostoc* b. *Volvox* c. *Ectocarpus* d. *Chara*

127. --------- is a hydrocolloid produced by ---------- algae

i. algin, green ii algin, brown iii. carrageen, red iv. carrageen, green

a. ii & iii b. i & iii c. i, iv d. ii & iv

128. Agar is a commercial product obtained from

a. algae b. bryophyte c. pteridophyta d. gymnosperms

129. Rhodophyceae is also known as

a. green algae b. blue-green algae c. red algae d. brown algae

130. Phaeophyceae is also known as

a. green algae b. blue-green algae c. red algae d. brown algae

131. Storage bodies called pyrenoids are located in

a. mitochondria b. chloroplasts c. nucleus d. golgi body

132. Which of the following chlorophyll is present in all the classes of algae

a. chl a b. chl b c. chl c d. chl d

133. Which of the following combination of chlorophylls is present in chlorophyceae

a. chl a & b b. chl a & c c. chl a & d d. chl b & c

134. Which of the following combination of chlorophylls is present in rhodophyceae

a. chl a & b b. chl a & c c. chl a & d d. chl b & c

135. Which of the following combination of chlorophylls is present in phaeophyceae

a. chl a & b b. chl a & c c. chl a & d d. chl b & c

136. Which of the following pigments will be found in *Volvox*

a. chl a & b b. chl a & c c. chl a, b & c d. chl b & c

137. Green algae have cell wall of -------- and reserve food material in the form of -----

a. cellulose, starch b. cellulose, mannitol

c. Hemicellulose, starch d. cellulose, floridean starch

138. Red algae have reserved food material in the form of

a. starch b. mannitol c. laminarin d. floridean starch

139. Brown algae have reserved food material in the form of

a. starch b. mannitol & laminarin c. glycogen d. floridean starch

140. Which of the following is right combination of characters for red algae

a. chl a + chl d + phycoerythrin + 2 flagella

b. chl a + chl c + phycoerythrin + 2 flagella

c. chl a + chl d + phycoerythrin + 4 flagella

d. chl a + chl d + phycoerythrin + no flagella

141. Which of the following is right combination of characters for green algae

i. chl a + chl b ii. cellulose cell wall

iii. starch reserve food iv. 2-8 flagella

a. i b. i & ii c. i, ii, & iii d. i, ii, iii & iv

142. Chlorophyll 'b' will be present in

a. *Ectocarpus* b. *Fucus* c. *Polysiphonia* d. *Oedogonium*

143. Chlorophyll 'c' will be present in

a. *Ectocarpus* b. *Fucus* c. both d. none

144. In addition to chlorophyll 'a' , *Ectocarpus* will have chlorophyll ------ and ----------

a. c and fucoxanthin d. d and fucoxanthin

c. c and phycoeryhrin d. e and fucoxanthin

145. Which of the following will show the presence of chlorophyll 'd'

a. *Draparnaldiopsis* b. *Volvox* c. *Fucus* d. *Polysiphonia*

146. Which of the following algae will not show the presence of chlorophyll c

a. *Ectocarpus* b. *Sargassum* c. *Fucus* d. *Polysiphonia*

147. Which of the following green algae has a plant body with axis and branches

a. *Chara* b. *Volvox* c. *Oedogonium* d. *Nostoc*

148. Which of the following is a red alga and not used as food

a. *Chlorella* b. *Spirulina* c. *Batrachospermum* d. *Porphyra*

149. The main photosynthetic part of *Fucus* is

a. holdfast b. stipe c. frond d. all

150. Asexual reproduction in red algae takes place by

a. uniflagellate zoospore b. biflagellae zoospore

c. quadriflagellate zoospore d. non-flagelate spore

151. Which of the following algae does not show haplontic life cycle

a. *Volvox* b. *Oedogonium* c. *Chara* d. *Fucus*

152. Which of the following algae shows diplontic life cycle

a. *Volvox* b. *Chara* c. *Draparnaldiopsis* d. *Fucus*

153. Which of the following alga shows haplo-diplontic life cycle

a. *Volvox* b. *Oedogonium* c. *Ectocarpus* d. *Fucus*

154. The vegetative body of algae is known as

a. mycelium b. plasmodium c. thallus d. gametophores

155. Agarophytes belong to

a. chlorophyceae b. phaeophyceae c. rhodophyceae d. cyanophyceae

156. Post-fertilization changes are elaborated in

a. chlorophyceae b. phaeophyceae c. rhodophyceae d. cyanophyceae

157. Mannitol is a reserved food material present in

a. *Volvox* b. *Fucus* c. *Polysiphonia* d. *Chara*

158. Which of the following is a blue green alga and used as food supplement

a. *Chlorella* b. *Spirulina* c. *Batrachospermum* d. *Porphyra*

159. Who is known as a father of Indian phycology?

a. M.O.P. Iyenger b. J.C.Bose c. R. Misra d. E.J.Butler

160. Which of the following algal group does not produce motile, flagellated cells

a. chlorophyta b. chrysophyta c. phaeophyta d. rhodophyta

161. Agar is extracted from the cell wall of

a. rhodophyta b. chlorophyta c. chrysophyta d. pyrrophyta

162. Reserve food is laminarin in which of the following group of algae

a. chlorophyta b. rhodophyta c. phaeophyta d. bacillariophyta

163. The kelps are algae found in

a. chlorophyta b. chrysophyta c. phaeophyta d. pyrrophyta

164. Frustules which are made of silica are characteristic feature of

a. euglenoids b. desmid c. diatoms d. seaweeds

165. Diatoms belong to

a. bacillariophyta b. xanthophyta c. rhodophyta d. chlorophyta

166. Carposporophytes are found in

a. chlorophyceae b. phaeophyceae c. rhodophyceae d. xanthopyceae

167. Globule and nucule are the sex organs found in

a. *Chara* b. *Oedogonium* c. *Volvox* d. *Ectocarpus*

168. Unilocular and plurilocular sporangia are formed in

a. *Fucus* b. *Sargassum* c. *Ectocarpus* d. *Chara*

169. Which of the following alga has a coenobial thallus

a. *Chara* b. *Volvox* c. *Oedogonium* d. *Draparnaldiopsis*

170. Female reproductive structure of *Polysiphonia* is called

a. antheridium b. nucule c. carpogonium d. trichogyne

171. Plakea stage during asexual reproduction is seen in

a. *Volvox* b. *Chara* c. *Ectocarpus* d. *Oedogonium*

172. Cap cell is a characteristic feature of

a. *Volvox* b. *Oedogonium* c. *Fucus* d. *Chara*

173. Species of *Oedogonium* developing antheridia on normal filaments are called

a. macrandrous b. nannandrous c. idioandrosporous d. gynandrosporous

174. Dwarf male formed in some species of *Oedogonium* is called

a. nannandrium b. trichogyne c. carpogonium d. nucule

175. Which of the following is called stonewort

a. *Fucus* b. *Volvox* c. *Chara* d. *Ectocarpus*

176. Female reproductive structure of *Chara* is

a. carpogonium b. globule c. nucule d. trichogyne

177. Male reproductive structure of *Chara* is

a. carpogonium b. globule c. nucule d. trichogyne

178. Antheridial filaments are present in

a. *Chara* b. *Volvox* c. *Oedogonium* d. *Fucus*

179. Sex organs are produced in flask-shaped conceptacles in

a. *Chara* b. *Fucus* c. *Polysiphonia* d. *Volvox*

180. Which of the following shows heterotrichous thallus structure

a. *Ectocarpus* b. *Oedogonium* c. *Volvox* d. *Nostoc*

181. *Ectocarpus* shows

a. haplontic life cycle

b. diplontic life cycle

c. haplo-diplontic isomorphic life cycle

d. haplo-diplontic heteromorphic life cycle

182. Cystocarp is formed in

a. *Fucus* b. *Chara* c. *Polysiphonia* d. *Volvox*

183. What is true about *Polysiphonia*

a. the plant body is heterotrichous

a. tetrasopre is haploid

b. carpospore is diploid

d. all

184. *Draparnaldiopsis* is a

a. green alga b. blue green alga c. red alga d. brown alga

185. The main axis consists of nodal and intermodal cells in

a. *Fucus* b. *Oedogonium* c. *Draparnaldiopsis* d. *Ectocarupus*

186. *Draparnaldiopsis* shows

a. haplontic life cycle

b. diplontic life cycle

c. haplo-diplontic heteromorphic life cycle

d. haplo-diplontic isomorphic life cycle

187. Reticulate chloroplast is present in

a. *Ectocarpus* b. *Oedogonium* c. *Chara* d. *Fucus*

188. Sexual reproduction is not reported in

a. *Ectocarpus* b. *Fucus* c. *Nostoc* d. *Volvox*

189. Which is a blue green alga

a. *Chara* b. *Volvox* c. *Ectocarpus* d. *Nostoc*

190. Heterocyst can be observed in

a. *Nostoc* b. *Volvox* c. *Chara* d. *Oedogonium*

Lichens

191. Llichens form first community in

a. psammosere b. halosere c. lithosere d. hydrosere

192. Source of litmus is the lichen

a. *Cetraria* b. *Rocella* c. *Parmelia* d. *Cladonia*

193. Which of the following moss is known as Reindeer moss

a. *Cetraria* b. *Rocella* c. *Parmelia* d. *Cladonia*

194. Which of the following moss is known as Iceland moss

a. *Cetraria* b. *Rocella* c. *Parmelia* d. *Cladonia*

195. Which of the following is a common crustose lichen

a. *Graphis* b. *Parmelia* c. *Usnea* d. *Cladonia*

196. Which of the following is a common foliose lichen

a. *Graphis* b. *Parmelia* c. *Usnea* d. *Cladonia*

197. Which of the following is a common fruticose lichen

a. *Graphis* b. *Parmelia* c. *Usnea* d. *Physica*

198. Which of the following structures are associated with the lichen thallus

a. cyphellae b. cephalodia c. isidia d. all

199. The algal component of a lichen is called

a. mycobiont b. biont c. phycobiont d. co-biont

200. Fungal component of the lichens is called

a. mycobiont b. phycobiont c. mycoplasma d. mycosome

GROUP- B (100)

Bryophytes

201. In the life cycle of bryophyte the dominant generation is the

a. haploid gametophyte b. diploid gametophyte

c. haploid sporophyte d. diploid sporphyte

202. Bryophytes play important role in plant succession on

a. bare rocks b. bare sand c. newly dug pond d. bare field

203. The bryophytes are attached to the substratum with the help of

a. true roots b. unicellular rhizoids

c. multicellular rhizoids d. b & c

204. The main plant body of bryophyte is

a. haploid sporophyte b. diploid sporophyte

c. diploid gametophyte d. haploid gametophyte

205. The sex organs in bryophytes are ---------- and produced on the ----------

a. unicellular, gametophyte b. multicellular, sporophyte

c. multicellular, gametophyte d. unicellular, sporophyte

206. The sporophyte of bryophytes is a

a. multicellular free-living structure

b. unicellular free-living structure

c. multicellular structure dependent on the gametophyte

d. unicellular structure dependent on the gametophyte

207. In bryophytes, the spores are ---------- and germinate to produce the ----------

a. haploid, gametophyte b. diploid, gametophyte

c. haploid, sporophyte d. diploid, sporophyte

208. Peat, which is used as fuel is derived from

a. *Funaria* b. *Polytrichum*

c. *Marchantia* d. *Sphagnum*

209. Which is used as a packing material for trans-shipment of living material

a. *Sphagnum* b. *Polytrichum*

c. *Funaria* d. *Marchantia*

210. *Marchantia* is a

a. thalloid liverwort b. leafy liverwort c. thalloid moss d. leafy moss

211. In *Marchantia*, gemmae can be seen in

a. gemma cups b. antheridiophore c. archegoniophore d. all

212. Gemmae are ---------- bodies used for ---------- reproduction

a. unicellular, asexual b. unicellular, sexual

c. multicellular, asexual d. multicellular, sexual

213. We can observe antheridiophore on the ---------- thallus of ----------

a. male, *Sphagnum* b. male, *Marchantia*

c. female, *Sphagnum* d. female, *Marchantia*

214. We can observe archegoniophore on the ---------- thallus of ----------

a. male, *Sphagnum* b. male, *Marchantia*

c. female, *Sphagnum* d. female, *Marchantia*

215. In the sporophyte of bryophytes the spores are formed in the

a. foot b. seta c. capsule d. seta & capsule

216. Spore of mosses germinate to produce a filamentous structure called

a. foot b. seta c. gemma d. protonema

217. Protonema is a ---------- structure observed in the life cycle of

a. branched filamentous, liverwort b. unbranched filamentous, liverwort

c. branched filamentous, moss d. unbranched filamentous, moss

218. Protonema is the ---------- stage of the ---------- in the life cycle of a ----------

a. first, sporophyte, moss b. first, gametophyte, moss

c. first, gametophyte, liverwort d. second, gametophyte, moss

219. Which is the correct sequence of events in the life cycle of a bryophyte

a. spore ------ gametophyte ------ sporophyte

b. gametophyte ------ zygote ------- sporophyte

c. Sporophyte ------ spore ------- gametophyte

d. all

220. The main gametophyte of moss is a

a. branched protonema b. unbranched protonema

c. prostrate thallus d. gametophore

221. Which of the following is a wrong pair

a. *Funaria* ----- moss

b. Marchania ----- liverwort

c. Polytrichum ----- liverwort

d. Sphagnum ----- moss

222. Protonema stage can be seen in the life cycle of

a. Fucus *b. Marchantia* *c. Volvox* *d. Polytrichum*

223. In moss, the leafy gametophyte is formed

a. directly by the germination of the spore

b. from a lateral bud developing on the protonema

c. from secondary spores formed by the division of spores

d. by the germination of spore mother cell

224. Retort cells are found in

a. *Porella* b. *Marchantia* c. *Sphagnum* d. *Anthoceros*

225. Which of the following does not belong to hepaticopsida

a. *Porella* b. *Pellia* c. *Anthoceros* d. *Riccia*

226. Which of the following has *Nostoc* in its thallus

a. *Marchantia* b. *Riccia* c. *Pellia* d. *Anthoceros*

227. *Sphagnum* is commonly known as

a. reindeer moss b. club moss c. peat moss d. Iceland moss

228. Rings of teeth in the capsule of *Polytrichum* are called

a. operculum b. peristome c. annulus d. elaters

229. Which of the following is a means of vegetative reproduction in bryophytes

a. gemma b. peristome c. operculum d. elaters

230. Which of the following group is commonly known as liverworts

a. lycopsida b. anthocerotopsida c. hepaticopsida d. bryopsida

231. Which of the following group is commonly known as hornworts

a. lycopsida b. anthocerotopsida c. hepaticopsida d. bryopsida

232. Which of the following group is commonly known as mosses

a. pteropsida b. anthocerotopsida c. hepaticopsida d. bryopsida

233. Pseudoelaters occur in the capsule of

a. *Porella* b. *Marchnatia* c. *Riccia* d. *Anthoceros*

234. *Nostoc* colonies are present in the thallus of

a. *Riccia* b. *Marchantia* c. *Anthoceros* d. *Sphagnum*

235. Elaterophore is present in the capsule of

a. *Riccia* b. *Marchantia* c. *Pellia* d. *Sphagnum*

236. The leafy gametophyte of moss is called

a. protonema b. elaterophore c. gametophore d. thallophore

237. *Sphagnum* is also known as

a. bog moss c. club moss d. reindeer moss d. soft moss

238. Leptom and hydrom can be seen in

a. *Polytrichum* b. *Sphagnum* c. *Anthoceros* d. *Marchantia*

239. Spore of the moss germinates to form a filamentous structure called

a. gametophores b. protonema c. elaterophore d. rhizoid

240. The theory of evolution of sporophyte in bryophyte by progressive sterilization of sporogenous tissue was first proposed by

a. Bower b. Smith c. Campbell d. Cavers

241. Which of the following bryophytes has the most advanced sporophyte

a. *Riccia* b. *Marchantia* c. *Anthoceros* d. *Polytrichum*

242. Archesporium develops from the amphithecium in case of

a. *Riccia* b. *Marchantia* c. *Anthoceros* d. *Sphagnum*

243. Trabeculae are seen in the capsule of

a. *Anthoceros* b. *Marchantia* c. *Sphagnum* d. *Polytrichum*

244. Number of teeth in the peristome of *Polytrichum* is

a. 4 b. 8 c. 16 d. 32 or 64

245. Which of the following structure is associated with the capsule of *Polytrichum*

a. operculum b. epiphragm c. peristome d. all

Pteridophytes

246. The main plant body of a pteridophyte is a

a. haploid gametophyte b. diploid gametophyte

c. haploid sporophyte d. diploid sporophyte

247. Which is the right sequence in pteridophytes

a. sporophyll ----→ spore ----→ sporangium ---→ gametophyte

b. sporophyll ----→ sporangium ------→ spore ---→ gametophyte

c. sporophyll ----→ sporangium ---→ gametophyte -----→ spore

d. sporophyll ---→ gametophyte -----→ sporangium ----→ spore

248. A strobilus or cone is compact structure formed by the

a. leaves b. sprophylls c. roots d. sopres

249. Which of the following is not true about the gametophyte of the pteridophytes

a. it is haploid b. it is thalloid

c. it is free-living d. it is unicellular

250. The gametophyte of pteridophyte is called a

a. thallus b. prothallus c. protonema d. sorus

251. Pteridophytes producing only one type of spore are called

a. isosporous b. heterosporous c. homosporous d. monosporous

252. Pteridophytes producing two types of spore are called

a. isosporous b. heterosporous c. homosporous d. monosporous

253. Which of the following genera of pteridophytes are heterosporous

a. *Selaginella* b. *Azolla* c. both d. none

254. Which of the following character of pteridophytes might have given rise to seed habit in plant

a. homosporous condition b. heterosporous condition

c. development of strobilus d. development of sporophylls

255. Filicophyta is another name for

a. pterophyta b. lycophyta c. sphenophyta d. psilophyta

256. In pteridophytes, a sporangium arising from a group of initials is called

a. pseudosporangium b. eusporangium c. leptosporangium d. polysporngium

257. In pteridophytes, a sporangium arising from a single initial cell is called

a. pseudosporangium b. eusporangium c. leptosporangium d. unisporngium

258. In which of the following pteridophytes, the sporangia are formed in specialized bodies called sporocarps

a. *Azolla* b. *Selaginella* c . *Lycopodium* d. *Equisetum*

259. In many ferns sporangia are present in the form of organized groups called

a. sorus b. sporocarp c. telome d. strobilus

260. Telome theory was proposed by

a. Zimmermann b. Bower c. Wilson d. Eames

261. The ultimate terminal portion of a dichotomizing axis is called

a. telome b. mesome c. rhizome d. phylloid

262. The sterile telomes are called

a. phylloid b. mesome c. rhizome d. ligule

263. Circinate vernation is a characteristic of

a. psilophyta b. lycophyta c. sphenophyta d. pterophyta

264. A flap like structure protecting the sorus is called

a. ligule b. indusium c. elater d. telome

265. Which of the following is not included in stele

a. endodermis b. pericycle c. vascular tissues d. pith

266. Which of the following steles has a pith

a. haplostele b. actinostele c. plectostele d. siphonostele

267. A stele without a pith is called

a. protostele b. monostele c. siphonostele d. unistele

268. A protostele with smooth core of xylem is called

a. haplostele b. actinostele c. plectostele d. solenostele

269. A protostele with xylem core having radiating ribs is called

a. haplostele b. actinostele c. plectostele d. solenostele

270. A protostele with xylem occurring as small parallel bands alternating with the phloem is called

a. haplostele b. actinostele c. plectostele d. solenostele

271. A siphonostele without overlapping leaf gaps is called

a. solenostele b. dictyostele c. meristele d. ploystele

272. A siphonostele with overlapping leaf gaps is called

a. solenostele b. dictyostele c. meristele d. ploystele

273. The spore of the pteridophytes germinates to form

a. prothallus b. protonema c. protocorm d. embryo

274. Which of the following is called whisk fern

a. *Psilotum* b. *Isoetes* c. *Lycopodium* d. *Pteris*

275. The sporangium of *Psilotum* is a fusion of _____ sporangia

a. two b. three c. four d. five

276. The sporangium of *Psilotum* is called

a. polysporangium b. multisporangium c. synangium d. triangium

277. Three chambered sporangium is present in

a. *Psilotum* b. *Isoetes* c. *Lycopodium* d. *Pteris*

278. The gametophyte of *Psilotum* is

a. endosporic b. exosporic c. amphisporic d. trisporic

279. Lycopodiums are commonly known as

a. club moss b. ground pine c. trailing evergreens d. all

280. *Lycopodium* is divided into two subgenera

a. Urostachya & Homoeophyllum b. Urostachya & Rhopalostachya

c. Homoeophyllum & Heterophyllum d. Rhopalostachya & Heterophyllum

281. Which of the following stele is not found *Lycopodium*

a. plectostele b. actinostele c. mixed protostele d. siphonostele

282. Which of the following types of gametophytes is found in *Lycopodium*

a. Cernuum type b. Clavatum type c. Phlegmaria type d. all

283. Protocorm is found in

a. *Psilotum* b. *Isoetes* c. *Pteris* d. *Lycopodium*

284. Homoeophyllum is a subgenus of

a. *Psilotum* b. *Lycopodium* c. *Isoetes* d. *Selaginella*

285. Heterophyllum is a subgenus of

a. *Psilotum* b. *Lycopodium* c. *Isoetes* d. *Selaginella*

286. *Selaginella* belongs to

a. psilophyta b. lycophyta c. sphenophyta d. filicophyta

287. Ligule is found in the leaf of

a. *Psilotum* b. *Lycopodium* c. *Equisetum* d. *Selaginella*

288. Glossopodium is associated in *Selaginella* with

a. leaf b. rhizophore c. ligule d. sporangium

289. Trabeculae are observed in the stem of

a. *Selaginella* b. *Lycopodium* c. *Equisetum* d. *Psilotum*

290. Rhizophore is present in

a. *Pteris* b. *Selaginella* c. *Marsilea* d. *Osmunda*

291. What is not true about *Selaginella*

a. it is heterosporous b. it is homosporous

c. it has ligulate leaf d. it has rhizophore

292. Which of the following is commonly known as horsetail

a. *Equisetum* b. *Selaginella* c. *Lycopodium* d. *Pteris*

293. The spores of *Equisetum* have four spirally arranged ribbon-like bands called

a. trabeculae b. elaterophore c. elaters d. tapetum

294. The members belonging to Sphenopsida are called

a. articulates b. sphenopsids c. arthrophytes d. all

295. Outer wall of the epidermis of *Equisetum* stem is impregnated with

a. magnesium b. calcium c. silica d. iron

296. Vallecular canals are present in the stem of

a. *Equisetum* b. *Selaginella* c. *Psilotum* d. *Pteris*

297. In *Equisetum*, the vallecular canals are present in the

a. pith b. pericycle c. xylem d. cortex

298. In *Equisetum* the sporangia are borne in

a. sporophyll b. sporocarp c. sporangiophore d. none

299. Which is known as 'the Royal' or 'Flowering' fern

a. *Osmunda* b. *Azolla* c. *Marsilea* d. *Pteris*

300. Which is considered to be intermediate between leptosporangiate and eusporangiate

a. *Lycopdium* b. *Osmunda* c. *Azolla* d. *Selaginella*