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HSSC-I NATIONAL BOOK FOUNDATION FBISE

BIOLOGY TEST - CHAPTER 9: DIVERSITY IN PLANT FUNCTIONS

Name:		Roll No.		Section:

Total Time: 2:30 Hour
Time Allowed: 150 Minutes

Total Marks: 150

PAPER OBJECTIVE
SECTION-A (MARKS 150)

NOTE: Section-A is compulsory. All parts of this section are to be answered on these pages and handed over to the center superintendent. Deleting / overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

Questions	A	B	C	D	A B C D
1. A substance that supplies essential elements required by an organism for growth and metabolic function is a:	pigment	hormone	nutrient	enzyme	○○●○
2. Plant nutrients primarily consist of:	organic compounds	inorganic compounds	lipids only	proteins only	○●○○
3. Plants are autotrophs because they can:	eat insects only	synthesise their own organic compounds	parasitise hosts	decompose dead matter	○●○○
4. The inorganic nutrients plants obtain from the environment include water, carbon dioxide and:	minerals	vitamins	sugars	proteins	●○○○
5. Carbon makes up about what percentage of dry plant mass?	5%	1%	0.1%	45%	○○○●
6. Oxygen and hydrogen are components of:	only the roots	only the seeds	plant organic compounds	only the leaves	○○●○
7. Nitrogen is a component of nucleic acids, proteins and:	starch	cellulose	cutin	chlorophyll	○○○●
8. Chlorosis at the tips of older leaves is a symptom of deficiency of:	zinc	nitrogen	boron	nickel	○●○○
9. Potassium acts as a cofactor of many enzymes and a major solute in:	nitrogen fixation	photosynthesis only	water balance	DNA synthesis	○○●○
10. Weak stems and poorly developed roots are signs of deficiency of:	potassium	sulphur	calcium	boron	●○○○
11. Calcium is an important component of the:	middle lamella	nucleic acid	chlorophyll	cell membrane lipids only	●○○○
12. Death of terminal buds and crinkling of young leaves occur in deficiency of:	iron	sulphur	nitrogen	calcium	○○○●
13. Magnesium is a component of:	lignin	chlorophyll	cellulose	nucleic acids	○●○○
14. Chlorosis between veins of older leaves indicates deficiency of:	boron	calcium	zinc	magnesium	○○○●

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Questions	A	B	C	D	A B C D
15. Phosphorus is a component of nucleic acids, phospholipids and:	ATP	chlorophyll	cellulose	proteins only	●○○○
16. Purpling of veins and poor flowering indicate deficiency of:	nitrogen	calcium	potassium	phosphorus	○○○●
17. Sulphur is a component of:	nucleic acids	proteins	cellulose	chlorophyll	○●○○
18. General chlorosis in young leaves is a symptom of deficiency of:	sulphur	magnesium	potassium	nitrogen	●○○○
19. Nutrients required in large amounts by plants are called:	toxins	macronutrients	micronutrients	trace elements	○●○○
20. Nutrients required in very small amounts are called:	micronutrients	fertilisers	major elements	macronutrients	●○○○
21. Boron is needed for pollen tube growth and:	nitrogen fixation	chlorophyll synthesis only	photolysis	cell wall function	○○○●
22. Death of meristems and thick leathery leaves indicate deficiency of:	nickel	copper	boron	zinc	○○●○
23. The most common micronutrient deficiency in any soil is that of:	molybdenum	zinc	boron	copper	○○●○
24. Zinc is active in the formation of:	chlorophyll	cellulose	starch	lipids	●○○○
25. Reduced internode length and crinkled leaves indicate deficiency of:	boron	zinc	nickel	copper	○●○○
26. Copper is a component of many redox enzymes and:	lignin biosynthetic enzymes	cellulose	nucleic acids	chlorophyll	●○○○
27. Nickel and molybdenum are involved in:	photosynthesis only	water uptake	cell division only	nitrogen metabolism	○○○●
28. Death of root and shoot tips and chlorosis in older leaves can be due to deficiency of:	calcium	boron	sulphur	molybdenum	○○○●
29. Cultivation of different crops alternately in the same soil is called:	crop rotation	crop spraying	crop failure	crop mixing	●○○○
30. Death of a part of a plant is called:	wilting	necrosis	chlorosis	etiolation	○●○○
31. Yellowing of leaves due to lack of chlorophyll is called:	chlorosis	necrosis	senescence	abscission	●○○○

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Questions	A	B	C	D	A B C D
32. Carnivorous plants are also called:	climbers	parasitic plants	insectivorous plants	aquatic plants	○○●○
33. Carnivorous plants are beneficial in habitats where the scarce nutrient is:	nitrogenous salts	light	water	oxygen	●○○○
34. Carnivorous plants are commonly found in:	oceans	deserts	alpine meadows	marshy areas	○○○●
35. Modified leaves of carnivorous plants act as:	tendrils only	traps	flowers	roots	○●○○
36. The pitcher plant belongs to the genus:	Nepenthes	Drosera	Utricularia	Dionaea	●○○○
37. The Venus flytrap is:	Nepenthes purpurea	Drosera intermedia	Cuscuta	Dionaea muscipula	○○○●
38. The sundew is:	Rafflesia	Drosera intermedia	Nepenthes	Dionaea muscipula	○●○○
39. Gaseous exchange in plants refers to the movement of:	minerals	water vapour only	CO_2 and O_2	N_2 and H_2	○○●○
40. Mesophyll cells lie between the:	root and shoot	upper and lower epidermis of a leaf	cortex and pith	xylem and phloem	○●○○
41. In dicot leaves, the layer of closely packed cells under the upper epidermis is the:	spongy mesophyll	cambium	palisade mesophyll	collenchyma	○○●○
42. The loosely arranged cells with large air spaces in a dicot leaf form the:	spongy mesophyll	epidermis	endodermis	palisade mesophyll	●○○○
43. Stomata are surrounded by two:	guard cells	sieve cells	epidermal hairs	companion cells	●○○○
44. The guard cells are:	rectangular	cylindrical	kidney or bean-shaped	hexagonal	○○●○
45. In bifacial leaves, more stomata are found on the:	upper epidermis	lower epidermis	petiole	both equally	○●○○
46. Leaves with equal surfaces are called:	simple leaves	compound leaves	isobilateral leaves	bifacial leaves	○○●○
47. The movement of water in and out of cells happens through:	photosynthesis	osmosis	diffusion of gases	active transport only	○●○○
48. Water moving into a cell is called:	exosmosis	endosmosis	plasmolysis	transpiration	○●○○

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Questions	A	B	C	D	A B C D
49. Water moving out of a cell is called:	imbibition	turgidity	exosmosis	endosmosis	○○●○
50. The measure of potential energy in water that allows it to move is the:	water potential	solute potential	pressure potential	osmotic gradient	●○○○
51. Water potential is expressed in:	joules per litre	kg	litres	megapascals (MPa)	○○○●
52. The water potential of pure water at atmospheric pressure is:	one	zero	infinite	negative	○●○○
53. Solutes lower the water potential by making it:	more positive	zero	equal to one	more negative	○○○●
54. The decrease in water potential due to dissolved solutes is called:	matric potential	solute (osmotic) potential	pressure potential	gravitational potential	○●○○
55. Solute potential in distilled water is:	positive	zero	infinite	negative	○●○○
56. The increase in water potential due to pressure above atmospheric is called:	osmotic potential	matric potential	solute potential	pressure potential	○○○●
57. Water enters a plant cell by osmosis and builds pressure, making the cell:	flaccid	turgid	dead	plasmolysed	○●○○
58. The correct order of water potential from soil to atmosphere is:	soil > root > stem > leaf > atmosphere	root > soil > stem > leaf	leaf > stem > root > soil	atmosphere > leaf > stem > root > soil	●○○○
59. Water moves from a region of:	zero to zero water potential	higher to lower water potential	lower to higher water potential	equal water potential	○●○○
60. The cell wall of root epidermal cells is:	impermeable	waterproof	freely permeable to water and minerals	selectively permeable	○○●○
61. The cell membrane is:	waterproof	freely permeable	differentially permeable	impermeable	○○●○
62. Water moves through the cell walls and intercellular spaces by the:	apoplast pathway	symplast pathway	vacuolar pathway	stomatal pathway	●○○○
63. Movement of water through cytoplasm connected by plasmodesmata is called the:	apoplast pathway	vacuolar pathway	symplast pathway	stomatal pathway	○○●○
64. Plasmodesmata are:	cytoplasmic connections between adjacent cells	vessels	root hairs	openings in leaves	●○○○
65. In the vacuolar pathway, water moves from vacuole to vacuole crossing the:	tonoplast	stomata	xylem	cuticle	●○○○

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Questions	A	B	C	D	A B C D
66. The two conducting tissues of plants are:	epidermis and endodermis	cortex and pith	cambium and cork	xylem and phloem	○○○●
67. Xylem conducts mainly:	oxygen	organic food	hormones only	water and minerals	○○○●
68. Phloem conducts:	minerals only	water only	oxygen	organic food	○○○●
69. Xylem is a complex permanent tissue that consists of how many cell types?	5	2	4	3	○○●○
70. The four cell types of xylem are tracheids, vessel elements, xylem fibres and:	xylem parenchyma	sieve tubes	companion cells	phloem fibres	●○○○
71. Tracheids are:	sieve cells	dead cells with lignified walls	cells with nuclei	living cells	○●○○
72. Tracheids are present in the xylem of:	ferns only	gymnosperms only	all vascular plants	angiosperms only	○○●○
73. Xylem vessels are found only in:	mosses	angiosperms	ferns	gymnosperms	○●○○
74. Xylem vessels are formed by the fusion of:	tracheids side by side	several vessel elements end to end	sieve plates	companion cells	○●○○
75. The only living cells of xylem are:	xylem fibres	tracheids	xylem parenchyma	vessels	○○●○
76. Xylem fibres give:	food conduction	photosynthesis	storage	mechanical support	○○○●
77. Phloem is composed of how many living cell types?	1	3	4	2	○●○○
78. The living cells of phloem are sieve tube elements, companion cells and:	vessels	phloem parenchyma	phloem fibres	tracheids	○●○○
79. The dead cells of phloem are:	sieve tubes	parenchyma	companion cells	phloem fibres	○○○●
80. Sieve tube elements are separated by a perforated partition called the:	sieve plate	middle lamella	annulus	stomium	●○○○
81. Sieve tube elements lack:	nuclei	cell walls	cytoplasm	membranes	●○○○
82. The functions of sieve tube elements are controlled by:	xylem parenchyma	phloem fibres	companion cells	guard cells	○○●○

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Questions	A	B	C	D	A B C D
83. Water and minerals are absorbed by the root epidermis and first move to the:	root xylem	cortex only	root phloem	pith	●○○○
84. The ascent of sap is explained by the:	pressure flow hypothesis	K^+ ion theory	cohesion–tension theory	starch–sugar theory	○○●○
85. In the cohesion–tension theory, the pull is created by:	respiration	photosynthesis	root pressure	transpiration	○○○●
86. The attraction between water molecules is called:	tension	cohesion	diffusion	adhesion	○●○○
87. The attraction between water molecules and the xylem walls is called:	tension	osmosis	adhesion	cohesion	○○●○
88. The continuous string of water in the xylem is kept:	tense and pulled upward	loose	stationary	dry	●○○○
89. The opening and closing of stomata depends on the turgidity of:	xylem cells	guard cells	palisade cells	epidermal cells	○●○○
90. When guard cells are turgid, the stomata are:	plasmolysed	open	dead	closed	○●○○
91. When guard cells become flaccid, the stomata are:	open	wide	torn	closed	○○○●
92. One theory explaining stomatal opening is the starch–sugar interconversion theory and the other is the:	cohesion theory	pressure flow theory	root pressure theory	K^+ ion theory	○○○●
93. Guard cells have:	no chloroplasts	no cell wall	more chloroplasts than surrounding epidermal cells	no nucleus	○○●○
94. In the morning, photosynthesis in guard cells increases the concentration of:	water	starch	glucose	oxygen only	○○●○
95. An increase in glucose in guard cells makes the water potential:	constant	zero	more negative	more positive	○○●○
96. When water enters the guard cells from the epidermal cells, the guard cells become:	dead	turgid	dry	flaccid	○●○○
97. In the evening, glucose in the guard cells is converted to insoluble:	starch	cellulose	lipid	protein	●○○○
98. The movement of organic solutes through the phloem is called:	osmosis	diffusion	translocation	transpiration	○○●○
99. In translocation, the organ that supplies food is the:	bud	source	node	sink	○●○○

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Questions	A	B	C	D	A B C D
100. In translocation, the organ that utilises or stores food is the:	sink	source	leaf	stoma	●○○○
101. A leaf is purely a:	root	sink	storage organ	source	○○○●
102. A fruit is particularly a:	leaf	stoma	sink	source	○○●○
103. Phloem sap consists of 10–25% dry matter, of which about 90% is:	glucose	starch	sucrose	fructose	○○●○
104. The mechanism of translocation in phloem is the:	cohesion–tension theory	pressure flow mechanism	root pressure theory	capillary action	○●○○
105. Sugars are loaded into the sieve tubes by:	stomata	xylem cells	companion cells (active transport)	root hairs	○○●○
106. Loading of sugars into the phloem causes water to move in by:	active transport	transpiration	diffusion of gases	osmosis	○○○●
107. The pressure gradient in the phloem is from:	root to root only	leaf to leaf	source to sink	sink to source	○○●○
108. The ability to maintain a steady state in a changing environment is called:	growth	homeostasis	adaptation	metabolism	○●○○
109. The maintenance of water and solute level in the body is called:	thermoregulation	osmoregulation (osmotic adjustment)	transpiration	homeostasis only	○●○○
110. A medium with higher water potential and lower solute concentration than cell sap is called:	hypotonic	isobaric	isotonic	hypertonic	●○○○
111. In a hypotonic medium, a plant cell becomes:	turgid	flaccid	burst always	dead	●○○○
112. A medium with lower water potential and higher solute concentration than cell sap is called:	hypertonic	hypotonic	isotonic	isobaric	●○○○
113. In a hypertonic medium, a plant cell becomes:	bigger	dead at once	turgid	flaccid	○○○●
114. In an isotonic medium, there is:	no water at all	net inflow of water	net outflow of water	no net movement of water	○○○●
115. Plants are classified on the basis of availability of water into hydrophytes, mesophytes and:	xerophytes	parasites	halophytes only	epiphytes	●○○○
116. Plants of areas with abundant water are called:	halophytes	hydrophytes	mesophytes	xerophytes	○●○○

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Questions	A	B	C	D	A B C D
117. Plants of areas with moderate water are called:	halophytes	xerophytes	mesophytes	hydrophytes	○○●○
118. Plants of areas with little water are called:	hydrophytes	epiphytes	mesophytes	xerophytes	○○○●
119. Examples of xerophytes are cactus and:	lotus	Opuntia	water lily	Hydrilla	○●○○
120. Xerophytes show a ___ rate of transpiration.	moderate	constant high	very high	very reduced	○○○●
121. Xerophytes have stomata in depressions called:	open stomata only	no stomata	sunken stomata	raised stomata	○○●○
122. Xerophytes with water-storing tissues are also called:	mesophytes	halophytes	succulent plants	aquatic plants	○○●○
123. Plants that live in saline soils are called:	mesophytes	hydrophytes	xerophytes	halophytes	○○○●
124. Low temperature affects the fluidity of the:	cell membrane	ribosome	cell wall only	nucleus	●○○○
125. To prevent crystallisation in membranes at low temperature, plants increase the proportion of:	saturated fatty acids	unsaturated fatty acids	sugars only	proteins	○●○○
126. Rapid chilling is ___ stressful to plants than a gradual drop in temperature.	equally	less	never	more	○○○●
127. High temperature stress causes excessive loss of water by:	photosynthesis	translocation	transpiration	respiration	○○●○
128. Loss of turgor in plants is called:	growth	dormancy	germination	wilting	○○○●
129. The pressure of water on the cell wall of turgid cells is called:	turgor pressure	osmotic pressure	root pressure	atmospheric pressure	●○○○
130. In herbaceous plants, support is mainly provided by:	turgidity of cells	cork	bark	secondary wood	●○○○
131. The tissues of thick-walled cells that provide support are called:	meristems	conducting tissues	storage tissues	mechanical tissues	○○○●
132. Extra cellulose deposited at the corners of cells is characteristic of:	xylem	parenchyma	collenchyma	sclerenchyma	○○●○
133. Collenchyma cells are:	living and can stretch	dead and lignified	dead and thin walled	non-living	●○○○

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134. Mature sclerenchyma cells are:	dead with lignified walls	living with cellulose	living with thin walls	full of chloroplasts	●○○○
135. In dicot stems, vascular bundles are arranged:	in a spiral	scattered	singly in the pith	in a ring	○○○●
136. Development is a programmed series of changes by which an organism becomes more:	small	simple	round	complex	○○○●
137. Growth is characterised by an irreversible increase in:	temperature	motion	colour	size and mass	○○○●
138. The four phases of plant growth include cell division, cell elongation, cell maturation and:	photosynthesis	respiration	translocation	differentiation	○○○●
139. Plants add new organs throughout life, which is called:	closed growth	open growth	limited growth	arrested growth	○●○○
140. In higher plants, growth is limited to the regions called:	epidermis	phloem	xylem	meristems	○○○●
141. Meristematic cells:	are lignified	never divide	are dead	divide actively throughout life	○○○●
142. The cell that remains in the meristem after division is called the:	initial	primary cell	derivative	stem cell only	●○○○
143. The increase in length of root and shoot is called:	tertiary growth	secondary growth	primary growth	dormancy	○○●○
144. Primary growth is carried out by the:	lateral meristem	cork cambium	apical meristem	intercalary meristem only	○○●○
145. The increase in thickness or diameter of a plant is called:	intercalary growth	secondary growth	apical growth	primary growth	○●○○
146. Secondary growth is characteristic of stems and roots of dicots and:	gymnosperms	ferns	mosses	monocots	●○○○
147. The two lateral meristems are cork cambium and:	intercalary meristem	apical meristem	vascular cambium	epidermis	○○●○
148. The vascular cambium lies between the primary xylem and the primary:	cortex	pith	phloem	epidermis	○○●○
149. The rings seen in a woody trunk that represent the growth of one year are called:	leaf rings	primary rings	cork rings	annual rings	○○○●
150. Water potential of soil, root, stem, leaf and atmosphere decreases in that order, so water moves:	from soil towards the atmosphere	only inside the leaf	from atmosphere towards soil	only inside the root	●○○○

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