

REASONING-4

76. Water conduction in angiosperms is more efficient than in gymnosperms.

In angiosperms tracheary elements are present while in most of the gymnosperms tracheids are present.

77. Xylem of angiosperms is more efficient in conducting water than xylem of other vascular plants.

In xylem of angiosperms tracheary elements are present while in xylem of gymnosperms tracheids are present.

78. Sieve tube cells of angiosperms do not survive for long.

They are thin walled and enucleated hence do not survive for long.

79. Sieve tube and companion cell are called 'sister cells'.

Both sieve tube and companion cells are developed from the same mother cell.

80. Endodermis in dicot stem is called starch sheath

The cells are filled with starch and are also called starch sheath.

81. Sclerenchymatous patch of the Pericycle of dicot stem is called bundle cap.

Because they are present on the tip of the vascular bundle

82. Vascular bundles are considered to be radial in roots.

Because the vascular bundles in roots are arranged in different radii.

83. Xylem is considered to be exarch in roots.

Because the protoxylem is facing towards the periphery and metaxylem facing towards the centre.

84. Cuticle is absent in epiblema of roots.

Since the roots are adapted for efficient conduction of water, the cuticle is absent.

85. Passage cells must be present in the endodermis of monocot roots.

In monocot root, movement of water takes place from cortex to xylem through thin walled passage cells as the other cells of endodermis are having casparian thickenings that prevents water movement.

86. Some grass leaves 'roll up' in very hot conditions.

They contain bulliform cells that help in rolling of leaf to prevent loss of water in hot conditions.

87. Secondary growth does not occur in maize stem.

Because the cambium is absent

88. The cross section of the wood of a tree shows many concentric rings.

Since the activity of cambium is seasonal, the wood produced in spring season and autumn season forms annual rings and this process repeats resulting in the formation of concentric rings.

89. Fruit flies are automatically attracted towards ripe bananas.

The diffusion of volatile substances from ripe bananas attracts fruit flies.

90. Some insects are attracted towards flowers with a strong smell.

Due to the diffusion of the chemicals released by the flower insects are attracted.

91. A plant cell placed in pure water swells but does not burst.

When plant cells swells due to endosmosis, turgor pressure increases and counteracted by wall pressure that opposes the expanding protoplasm hence the cell do not burst.

92. It is difficult to open wooden doors or windows during the rainy season.

Due to the imbibition of water by the wooden door, its volume increases making it difficult to open

93. When salt is added to chopped pieces of cucumber, plenty of water is released.

When salt is added, the external solution becomes hypertonic to the cells of cucumber resulting in exosmosis.

94. Plenty of salt is added to cut vegetables while preparing pickles at home.

Adding salt makes the solution hypertonic to the infectious agents like fungi and kills them hence pickles are preserved by this method.

95. Maximum absorption of water occurs in the region of root hairs.

Root hair are thin walled and vacuolar and provides a maximum surface area for absorption.

96. Water may be present in the soil, but still not available for plants.

Water present in the soil may remain as thin film around the soil particles and becomes hygroscopic water which cannot be absorbed.

97. Ascent of sap in a plant is usually higher during daytime than night.

Daylight increases transpiration that results in transpiration pull resulting in increased ascent of sap.

98. Ascent of sap is usually slower in plants during night than during day.

During night the rate of transpiration is low hence the ascent of sap is also slow.

99. When guard cells expand due to endosmosis, they produce a curvature.

Because the inner wall is thick and non-elastic and also has cellulose micelles that are radially arranged, the guard cells produce curvature when there is endosmosis.

100. Photosynthesis in guard cells causes the opening of stomata.

Photosynthesis leads to the synthesis of osmotically active glucose, resulting in endosmosis hence the stomata opens.

101. With the influx of K^+ ions into the guard cells, stoma opens.

Influx of K^+ ions in the presence of sunlight leads to a cascade of events resulting in the synthesis of osmotically active malate ions, hence endosmosis occurs and stomata open.

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