6. PLANT WATER RELATION

MULTIPLE CHOICE QUESTIONS (1 MARK EACH)

1 **Water present in the form of hydrated oxides of Silicon, Aluminium is called _____**

A Hygroscopic Water
B Gravitational Water
C Combined Water
D Capillary Water

2 **Most plant cells and tissues constitutes _____% water**

A 90-95 %
B 70-80 %
C 10-25 %
D 0-20 %

3 **_____ type of tissues are present in epiphytic roots**

A Meristematic
B Parenchyma
C Velamen
D Epithelial

4 **In the zone of absorption, epidermal cells form unicellular hair like extensions called _____**

A Epiblema cells
B Roots
C Root hairs
D Velamen tissues

5 **Outer layer of root hair is made up of _____**

A Cellulose
B Lignin
C Starch
D Pectin

6 **Inner layer of root hair is made up of _____**

A Cellulose
B Lignin
C Starch
D Pectin

7 **Cell wall is _____**

A Selectively Permeable
B Freely Permeable
C Non Permeable
D Impermeable

8 **Plasma Membrane is _____**

A Selectively Permeable
B Freely Permeable
C Non Permeable
D Impermeable

9 Root hair is _____ extension of epiblema cells

A Cytoplasmic
B Protoplasmic
C Nucleoplasmic
D Cellulosic

10 **Fine soil particles imbibe or absorb water and hold it. This is called as _____**

A Hygroscopic Water
B Gravitational Water

C Combined Water
D Capillary Water

11 To carry put plasmolysis, a cell must be placed in
A. Pure water
B. Hypertonic water
C. Hypotonic solution
D. Hypertonic solution

12 The liquid adsorbed during imbibition is known as
A. Solid
B. Imbibant
C. Imbibate
D. Colloids

13 Water moves either by apoplast or symplast pathway across the root. Ultimately it becomes symplastic at.
A. Pericycle
B. Endodermis
C. Xylem
D. Phloem

14 The positive hydrostatic pressure which develops due to absorption of water is called as
A. Capillary force
B. Transpiration pull
C. Root pressure
D. Transpiration

15 The example of amphi-stomatic leaf is
A. Nerium
B. Lotus
C. Grass
D. opuntia

VERY SHORT NASWER TYPE QUESTIONS(1 MARK EACH)

1 Why water acts as a thermal buffer?
2 Define : Root hair
3 What is meant by Gravitational water?
4 What is meant by Hygroscopic water?
5 What is meant by Combined water?
6 What is meant by Capillary water?
7 What is the composition of outer layer of root hair?
8 What is the composition of inner layer of root hair
9 From which type of cells, root hair is originated
10 Which type of tissue is present in epiphytic roots?
11 Define imbibition.
12. What is DPD?
13 Which symbol is used to denote water potential?
14 What do you understand by the term lateral conduction of food?
15 Which organ is mainly involved in guttation?

SHORT ANSWER TYPE QUESTIONS (SA-I) (2 MARKS EACH)

1 Why water is called as ‘Elixir of Life’?
2 What are the different types of water?
3 Draw a neat and labelled diagram of “Structure of Root hair”.
4 Explain the structure of root hair.

5 In which forms water is available to roots for absorption?
6 Explain the different properties of water.
7 Define imbibate and imbibant.
8 Give importance of diffusion to plants.
9 Differentiate between exosmosis and endosmosis.
10 Mention various factors affecting water absorption.
11 Give various objections to root pressure theory.
12 Draw a well labelled diagram of structure of stomata.
13 Give advantages of transpiration.

SHORT ANSWER TYPE QUESTIONS (SA-II) (3MARKS EACH)

1 Draw a neat and labelled diagram of Root tip showing root hair zone.
2 Draw a neat and labelled diagram of Root hair.
3 Write a note on morphological structure of root.
4 How roots can act as a water absorbing organ?
5 Why capillarity theory was discarded?
6 Explain the concept of water potential.
7 Explain various types of transpiration.
8 Describe the path of water across the root with the help of labelled diagram
9 Differentiate between passive and active absorption.

LONG ANSWER TYPE QUESTIONS(LA) (4 MARKS EACH)

1 Explain the structure of root hair with the help of neat and labelled diagrams.
2 Explain transpiration pull theory for ascent of sap.
3 Explain the mechanism of transport of food through phloem with suitable diagram,
4 Explain the mechanism of opening and closing of stomata.