97. Assertion(A) : Transpiration reduces leaf temperature
Reason (R) : Transpiration is a physical process
98. Assertion(A) : ABA is considered as a natural antitranspirant in plants
Reason (R) : ABA induces stomatal closure as the plant faces water-stress condition
99. Assertion(A) : Large quantities of K^+ accumulate in gaurd cells, when the plants are exposed to the sun light.
Reason (R) : ATP obtained by only photo phosphorylation is used in the accumilation of K^+ ions

B. NUTRITION IN PLANTS

3.5 INTRODUCTION

LEVEL - I

100. Assertion(A): Hydrogen bacteria are chemo autotrophs.
Reason (R) :The organisms which obtain their nutrition from living organisms are called parasites.
101. Assertion(A): Cuscuta is an obligate Parasite.
Reason (R) :Cuscuta cannot survive without a host.
102. Assertion(A): Orobanche is an autotroph.
Reason (R): Organisms which can prepare their food from inorganic substances are called autotrophs.
103. Saprophytes are
1) Chemoautotrophs 2) Chemoheterotrophs
3) Photoautotrophs 4) Obligate parasites.
104. Phenomenon of preparing food from CO_2 and water in the presence of sunlight is called
1) Chemotrophism 2) Parasitism
3) Autotrophism 4) Symbiosis.
105. Symbionts in lichens are
1) Algae and Bacteria 2) Algae and fungi
3) Fungi and Bacteria
4) Fungi and Vascular cryptogams
106. Chemoheterotrophs include
1) Saprophytes and parasites
2) Saprophytes and hydrogen bacteria
3) Parasites and Nitrogen bacteria
4) Saprophytes and Sulphur bacteria.
107. Chemotrophs derive energy from
1) Oxidation of Inorganic substances only
2) Organic substances only
3) Inorganic or organic substances 4)Sun light only
108. Mutual beneficial association of two dissimilar organisms is
1) Parasitism 2) Chemotrophism
3) Autotrophism 4) Symbiosis

3.6. MINERAL NUTRITION

SYNOPSIS

- Green plants can prepare most of their food from simple substances
- Organisms, which can prepare their own food through photosynthesis are called autotrophs.
- Some other organisms, including nongreen plants, which cannot make their own food and obtain their nutrition from autotrophs are termed heterotrophs.
- The study of how plants obtain mineral elements and utilise them for their growth and development is called **mineral nutrition.**
- **Aristotle** (384 - 324 B.C) suggested that soil is the material of which plants are made.
- **John Woodward** (1699), a professor of medicine in London proved the necessity of soil for plant growth by his experiments.
- In 1804 **de Saussure** found that plants grown in dilute soil solution gain more weight as compared to the plants grown in distilled water.
- In 1950's **Julius Sachs** and **W. Knops** taking advantage of the technique of growing plants in water culture

SOIL AS SOURCE

- Majority of the nutrients that are essentail for the growth and development of plants becone available to the roots due to weathering and breakdown of rocks.
- These processes enrich the soil with dissolved ions and inorganic salts.
- Soil consists of a wide variety of substabces which are responsible for weathering of rocks.
- Soil not only supplies minerals but laso harbours nitrogen-fixing bacteria, other microbes, holds water, supplies air to the roots and acts as a matrix that stabilizes the plant.
- The clay and humus particles of the soil are present in the form of colloids and are usually negatively charged (anions).
- These charges are balanced by the binding of positively charged ions(cations), which are taken up from the soil solution.
- Clay particles take up and bind $NH_4^+, Ca^{++}, Mg^{++}, K^+, Mn^{++}$ and other cations.