

Course code	Course Title	C	H	I	E	T
17U2BAC2	PLANT PHYSIOLOGY	4	5	25	75	100

Unit I

10 Hrs

Diffusion, osmosis, imbibitions and plasmolysis. Absorption of water - active and passive mechanisms. Transpiration – types. Mechanism of stomatal movement - starch and sugar hypothesis and significance.

Unit II

5 Hrs

Absorption of minerals (Carrier concept and Cytochrome pump theory). Translocation of Sugar - Munch's Mass flow hypothesis.

Unit III

20 Hrs

Photosynthesis-Light reaction: Cyclic and Noncyclic photophosphorylation. CO₂ assimilatory pathways (C₃). Respiration-substrate-RQ-Aerobic respiration - Glycolysis, Krebs cycle and ETS.

Unit IV 15 Hrs

Photorespiration - Dual action of Rubisco - C₂ cycle (Glycolate cycle). HMP pathway and its significance. Biological nitrogen fixation - symbiotic.

Unit V 10 Hrs

Plant growth hormones - structure and Physiological role of Auxin. A brief account on Photoperiodism and Vernalization.

REFERENCES

1. Noggle and Fritz – Introductory Plant Physiology.
2. Bidwell – Plant Physiology.
3. Jain – Fundamentals of Plant Physiology.

PRACTICALS

1. Determination of osmotic potential of potato by Chardakov's method.
2. Determination of photosynthetic rate using Wilmott's bubbler.
3. Effect of sodium bicarbonate on photosynthetic rate.
4. Imbibition rate of various seeds.