

BIOCHEMISTRY OF PLANTS AND MICROBES

UNIT – I

Photosynthesis : Photosynthesis pigments and photosynthetic apparatus. Light reaction. Hill reaction; Emerson effect, photosystems electron phosphorylation. Dark reactions carbon dioxide fixation in C3, C4 and CAM plants. Factors affecting photosynthesis and photorespiration.

Plant growth regulators : Natural growth hormones – auxins, gibberellins, cytokinins, abscisic acid and ethylene. Synthetic growth hormones, plant growth inhibitors and retardants.

UNIT – II

Nitrogen fixation : symbiotic and non-symbiotic. Nitrogenase, nitrate assimilation, nitrate reductase and nitrite reductase, sulfur and carbon cycles, Mineral metabolism – N,P,K, Fe, Zn & B.

UNIT – III

Prokaryotes and Eukaryotes : Bacteria – structure and physiology of E.Coli., conjugation and transformation in bacteria.

Blue-green algae-morphology – economic importance of higher algae. Yeast and fungi-morphology, important stages in the life cycle of an yeast-spores of fungi.

UNIT – IV

Soil and water microbiology: Soil formation; rhizosphere. Purification of drinking water, test for purity of water. Food and water borne diseases. Typhoid, cholera, Bacillary, dysentery, deparitis, ameobiosis, Air borne pathogens: tuberculosis, pox,diphtheria and poliomyelitis.

UNIT – V

Viruses : Structure and replication of animal and plant viruses. Oncogenic viruses-retroviruses – T. even phages – lytic cycle – lambda phage –lysogeny.

Reference:

1. Plant physiology – Devlin
2. Plant physiology – Hess
3. Introduction to plant Biochemistry – Goodwern & Mercer
4. Introductory microbiology – C.Ross
5. Microbiology – Pelzar
6. General Microbiology – Stanier
7. Microbiology – Levy & Campbell
8. Microbiology –Prescott
9. Microbiology – Torotora.