

**Paper – I Plant Physiology**

Internal Assessment-10

Max. Marks – 40

Time– 3 Hrs.

**Note:** Five questions to be attempted in all, selecting two questions from each unit. Question No. 1 will be compulsory (short answer type). Nine questions are to be set spread over the entire syllabus. All questions carry equal marks.

**UNIT-I**

**Plant-water Relations:** Importance of water to plant life; physical properties of water; Imbibition, Diffusion, Osmosis and Plasmolysis; absorption and transport of water; transpiration-types, physiology of stomata, factors affecting transpiration, importance of transpiration.

**Mineral Nutrition:** Essential macro and micro elements and their role; mineral uptake; deficiency symptoms.

**Transport of Organic Substances:** Mechanism of phloem transport; source-sink relationship; factors affecting translocation.

**UNIT-II**

**Photosynthesis:** Significance; historical aspects; photosynthetic pigments; action spectra and enhancement effects; concept of two photosystems; Z-scheme; photo-phosphorylation; Calvin cycle; C4 pathway; CAM plants; photorespiration.

**Respiration:** ATP–the biological energy currency; aerobic and anaerobic respiration; Krebs cycle; electron transport mechanism (chemi-osmotic theory); redox -potential; oxidative phosphorylation; pentose phosphate pathway.

Seed dormancy; plant movements; the concept of photoperiodism; physiology of flowering; florigen concept; physiology of senescence; fruit ripening.

**Suggested Readings:**