

Class : B.Sc. II
 Subject : BOTANY
 Periods per week : Th. _____
 Weeks (Total) : 15

Semester IV
 Paper No:
 Pr. _____

WEEK	Topic to be covered
1	Salient features of Gymnosperms. Practicals:- Study of external morphology of Cycas
2	Geological time scale. Practicals:- Study of anatomy of Cycas..
3	Study of Fossilization. Practicals:- Study of reproductive morphology of Cycas.
4	Study of Fossilization techniques. Practicals:- Study of external morphology of Pinus.
5	Study of fossil fuel. Practicals:- Study of anatomical morphology of Pinus.
6	Study of external morphology of Cycas. Practicals:- Study of reproductive morphology of Pinus.
7	Study of root and stem T.S. of Cycas. Practicals:- Histochemical tests.
8	Study of leaf T.S. of Cycas and male cone. Practicals:- Study of cosmetic plants..
9	Study of female cone and fertilization. Practicals:- Study of Medicinal plants.
10	Study of life cycle of Cycas. Practicals:- Study of source of timber, gum etc..
11	Study of external morphology of Pinus. Practicals:- Study of Clove, Cumin etc..
12	Study of cones of Pinus. Practicals:- Study of permanent slides and specimen.
13	Study of life cycle of Pinus. Practicals:- Preparation of permanent slides of Leaf and rachis of Cycas.
14	Revision of syllabus. Practicals:- Preparation of permanent slides of Needle and stem of Pinus.
15	Question paper pattern. Practicals:- Preparation of submission.

Dr. Rafiuddin Naser

Class: B.Sc. II Year

Subject: BOTANY

Periods per week:

Weeks (Total): 15.

Paper No: XII

Semester: IV

(Plant Physiology)

Th._

Pract._

WEEKS	TOPICS TO BE COVERED
1	1. Plant water relations: a) Diffusion, osmosis, plasmolysis and imbibition b)Water absorption and ascent of sap (Transpiration pull theory)
2	c)Transpiration – Definition, types -cuticular, lenticular and stomatal, structure of stomata, mechanism of opening and closing of stomata (starch – sugar hypothesis) 2. Mineral nutrition: a) Macro elements: roles and deficiency symptoms of N, P, K.
3	Micro elements Mg, Ca, Fe, Zn, Bo, Mob) Mineral uptake – passive(ion exchange theory)
4	Active (carrier concept)
5	3. Translocation of solutes: Mass flow hypothesis, protoplasmic streaming theory, Source and sink relationship.
6	1. Enzymes: Chemical nature – holoenzyme ,apoenzyme, prosthetic group, Cofactor and coenzyme, properties.
7	Nomenclature, classification basedon type of reactions, mechanism of enzyme action
8	2. Growth: Definition, Phases of Growth, Sigmoid growth curve. Growth regulators: Discovery.
9	Structure, roles and practical applications of Auxins, Gibberellins,
10	Structure, roles and practical application of Cytokinins, Absciscic acid and Ethylene
11	1. Photosynthesis: Definition, ultra structure of chloroplast, photosynthetic pigments, Light reactions -Hill reaction, red drop and Emerson enhancement effect.
12	Two pigment systems (PS I, PS II), Photophosphorylation – cyclic and Non-cyclic, Z-scheme; Dark reactions -C3 cycle.
13	C4 and CAM pathways, 2. Respiration: Definition, Ultra structure of mitochondria.
14	Types of Respiration, Glycolsis, TCA Cycle.
15	Electron transport system, alcoholic and lactic acid fermentation.

Dr. Ashfaq Khan