

(MODIFIED SYLLABUS FOR TDPH 6TH SEMESTER EXAMINATIONS-2021)

NAME OF THE SUBJECT: BOTANY (HONOURS)

SEMESTER-VI

PAPER:-7th (THEORY)

MARKS:100

Internal Assessment:20

End Semester Examination:80

UNIT I: BIOCHEMISTRY

Structure and properties of water, pH, carbohydrate: classification, structure and properties; lipids: classification and function; proteins: classification and structures (primary, secondary, tertiary) amino acids: structure, essential amino acids, function of enzyme, glycolysis, conversion of pyruvic acid to acetyl Co-A, TCA cycle: Membrane chemistry, transport and mechanism of ion uptake.

UNIT II: PLANT PHYSIOLOGY

Water potential, water absorption by roots, components of photosynthesis, types of chlorophyll and carotenoids and their structure and function, Red drop effect & Enhancement effect, mechanism of electron transport in PSI and PSII, C3 and C4 plants, Calvin cycle, HSK pathway, Photosynthetic efficiency, N-metabolism, Assimilation of Nitrogen, Biological Nitrogen Fixation, Photorespiration, CAM, oxidative phosphorylation, mitochondrial ETC, PP Pathway, photoperiodism, vernalization, plant growth regulators (IAA, & Gibberellins).

UNIT III: PHARMACOGNOSY

Importance of pharmacognosy in modern medicine, Drug adulteration, Classification and evaluation of drugs: Organoleptic, microscopic, chemical and physical evaluation, Secondary metabolites, major types of secondary metabolites with source plants: Flavonoids, Steroids, Terpenoids, phenolics and alkaloids; Organoleptic study of whole plant of *Andrographis paniculata*, rhizome of Ginger, leaves of *Adhatoda*.

UNIT IV: PLANT BIOTECHNOLOGY

Totipotency and concept of plant tissue culture; Function and Organisation of a typical plant tissue culture laboratory; Techniques of plant tissue culture: Protoplast culture technique, Meristem tip culture technique; Haploid culture and Embryo culture; prokaryotic vector system and marker genes; Transformation; *Agrobacterium* mediated gene transfer.

(MODIFIED SYLLABUS FOR TDPH 6TH SEMESTER EXAMINATIONS-2021)
NAME OF THE SUBJECT: BOTANY (HONOURS)
SEMESTER-VI
PAPER-8th (PRACTICAL BT-602)
MARKS:100

Internal Assessment : 20
End Semester Examination : 80

Section : A

1. Detection of organic acids: citric, tartaric, and oxalic from unknown samples.
2. Detection of the nature of carbohydrate: glucose, fructose and sucrose from unknown samples.
3. Detection of Ca, Mg, and Fe from plant ash sample.

Section : B

4. Effect of CO₂ on the rate of photosynthesis.
5. To extract and separate chlorophyll pigment by chromatogram.
6. Relationship between transpiration and evaporation.
7. Measurement of oxygen uptake by respiring tissue (per g/hr).
8. Determination of the RQ of germinating seeds.
9. Effect of temperature on absorption of water by storage tissue and determination of Q₁₀.
10. Comparison of imbibitions of water by starchy, proteinaceous and fatty seeds.

Section : C

11. Study of Palisade ratio and Vein islet no.
12. Powder microscopy of the plant samples as per contents of the syllabus.

Section : D

13. Demonstration and function of autoclave, laminar airflow, pH meter and culture room.
14. Aseptic techniques of explants culture.

Laboratory Records:

1. Submission of Laboratory note book .