

BOTP-ME 504	PLANT BIOCHEMISTRY	(2 CREDITS) 60 HOURS
1	Introduction to common instruments in laboratory pH meter, Colorimeter, Centrifuge, Soxhlet apparatus, Hot air oven.	
2	Preparation of Molar, Molal, Normal, and ppm solutions.	
3	Preparation of the buffer solutions Citrate buffer, Phosphate buffer, Acetate buffer.	
4	Quantitative Estimation of Total Carbohydrates (Reducing & non-reducing sugars) from plant samples.	
5	Extract and quantify total proteins from plant samples.	
6	Estimation of Amino Acids by Colorimetric Method.	
7	Separation of amino Acids by paper chromatography.	
8	To study the activity of the enzyme Urease and the factors affecting the activity. (Concentration and Time)	
9	Experiments on enzyme action: Estimate the enzyme activity by the colorimetric method for Amylase.	
10	Estimate the enzyme activity by the colorimetric method for Invertase.	
11	Estimate the enzyme activity by the colorimetric method for Protease.	
12	Qualitative analysis from plant extracts for macromolecules. d) Reducing sugar (Fehling's test, Benedict's test, Barfoed's test, Trommer's test, Moore's test) e) Non-reducing sugar (Fehling's test, Benedict's test) t) Proteins (Biuret test) Amino acids (Ninhydrin test, Test for Tyrosine, Test for Tryptophan, Test for Cysteine)	
13	Qualitative test from plant extracts for secondary metabolites c) Alkaloids, Saponins d) Glycosides/cardiacglyce Flavonoids, Phenols, Tannins.	
14	Separations of secondary metabolites from medicinal plant extract by paper chromatography / thin layer chromatography and visualizing bands under UV light or after staining.	
15	Quantitative estimation of alkaloids from plant extract.	
16	Quantitative estimation of Saponins from different plant extracts.	
17	Isolate genomic DNA from plant samples and assess purity and yield by quantification using spectrophotometry (A ₂₆₀ /A ₂₈₀ ratios) (Demonstration on virtual mode).	
18	Demonstration of separating and visualizing proteins based on their molecular weight using SDS-PAGE Analysis (Demonstration on virtual mode).	
19	HPLC analysis of flavonoids, alkaloids, or phenolic compounds (Demonstration on virtual mode).	