GROUP - (B) ELECTIVE PAPER
PAPER - IV. CHEMISTRY OF NATURAL PRODUCTS

M.M. - 75 | 60 Hrs. (2 Hrs./Week)

Units	Topics	
I	**Terpenoids and Carotenoids**	**15 Hrs.**
	Classification, nomenclature, occurrence, isolation, general methods of structure determination, isoprene rule.	
	Structure determination, stereochemistry, biosynthesis and synthesis of the following representative molecules: Citral, Geraniol, α-Terpeneol, Menthol, Farnesol, Zingiberene, Santonin, Phytol, Abietic acid and β-Carotene.	
II	**Alkaloids**	**15 Hrs.**
	Definition, nomenclature and physiological action, occurrence, isolation, general methods of structure elucidation, degradation, classification based on nitrogen heterocyclic ring, role of alkaloids in plants.	
III	**Steroids**	**15 Hrs.**
	Occurrence, nomenclature, basic skeleton, Diel's hydrocarbon and stereochemistry.	
	Isolation, structure determination and synthesis of Cholesterol, Bile acids, Androsterone, Testosterone, Estrone, Progestrone, Aldosterone.	
	Biosynthesis of steroids.	
IV	**Plant Pigments**	**3 Hrs.**
	Occurrence, nomenclature and general methods of structure determination. Isolation and synthesis of Apigenin, Luteolin, Quercentin, Myrcetin, Quercetin-3-glucoside, Vitexin, Diadzein, Butein, Aureusin, Cyanidin-7-arabinoside, Cyanidin, Hirsutidin.	
	Biosynthesis of flavonoids: Acetate pathway and Shikimic acid pathway.	
V	**Porphyrins**	**3 Hrs.**
	Structure and synthesis of Haemoglobin and Chlorophll.	
	Prostaglandins	**3 Hrs.**
	Occurrence, nomenclature, classification, biogenesis and physiological effects. Synthesis of PGE_2 and $PGF_{2\alpha}$	
	Pyrethroids and Rotenones	**2 Hrs.**
	Synthesis and reactions of Pyrethroids and Rotenones.	
	(For structure elucidation, emphasis is to be placed on the use of spectral parameters wherever possible).	