

Syllabus for Plant Biotechnology PGQP78 (xv)

UNIT I

Introduction, Cryo and organogenic differentiation, Types of culture: Seed, Embryo, Callus, Organs, Cell and Protoplast culture. Micro propagation Axillary bud proliferation, Meristem and shoot tip culture, cud culture, organogenesis, embryogenesis, advantages and disadvantages of micro propagation.

UNIT- II

In vitro haploid production Androgenic methods: Anther culture, Microspore culture Ando genesis Significance and use of haploids, Ploidy level and chromosome doubling, diploidization, Gynogenic haploids, factors effecting gynogenesis, chromosome elimination techniques for production of haploids in cereals.

UNIT - III

Protoplast Isolation and fusion Methods of protoplast isolation, Protoplast development, Somatic hybridization, identification and selection of hybrid cells, Cybrids, Potential of somatic Hybridization limitations.

Somaclonal variation

Nomenclature, methods, applications basis and disadvantages

UNIT - IV

Plant Growth Promoting bacteria.

Nitrogen fixation, Nitrogenase, Hydrogenase, Nodulation,

Biocontrol of pathogens, Growth promotion by free-living bacteria.