

HORTICULTURE

PART-I

Fruit Industry in India and its potential. General principles of cultivation. Method of propagation. Physiological basis of rooting. Special plant growing structures – mist propagation, green house and glass house. Promising root stocks for fruit crops. Plant growth regulators, retardants and inhibitors relating to flowering, sex expression, fruit set, fruit development and ripening. Dormancy and rest and rest period. Pollination and fruit set. Growth and fruiting habits of fruits and nut species. Parthenocarpy. Orchard management practices, manure and manuring, irrigation, training and pruning high density planting. Fruit thinning and fruit drop.

Origin, history, pomological description, climatic requirements and production techniques of important temperate, sub-tropical and tropical fruit crops. Important pests, diseases and physiological disorders and their management. Integrated management of pests and diseases. Harvesting and harvest maturity indices. Handling and marketing problems of major fruits. Special problems of production.

Principal methods of preservation. Important fruit and vegetable products. Processing techniques and equipments. Wastes from processing factory and their impact on environment. By-products and utilization. Nutritive value of fresh and processed fruits and vegetables. Standards of fruit and vegetable products.

Economic principles in fruit and vegetable production. Use of planning and budgeting techniques. Efficiency measures of orchard management.

Extension education and its importance. Methods of evaluation of extension programmes. Socio-economic survey and status of different categories of farmers. Training programmes for extension workers. Lab to field and T&V programmes.

PART-II

Importance, nutritive value and classification of vegetables. Types of vegetable gardening. Principle of vegetables, cultivation including nursery management. Climatic requirement and cultivation of major summer and winter vegetable crops. Off-season vegetable production. Diseases and pests of vegetable crops and measures to control.

Weeds, their characteristics and association with various vegetable crops.

Principles of plant breeding in the improvement of major vegetable crops. Methods of breeding of self, cross-pollinated and vegetatively propagated crops. Seed technology and its importance. Production, processing, testing and marketing of vegetable seeds.

Plant physiology and its significance. Growth and development factors affecting growth. Absorption and translocation of water transpiration and water economy. Modern concepts of photosynthesis and respiration.

Processes and factors of soil formation. Mineral and organic constituents of soil and their role in maintaining soil productivity. Plant nutrient elements in soils and their availability. Nitrogenous, phosphatic potassic and micronutrient fertilizers and their use. Problem soils and their reclamation. Water conservation

atershed management. Water use efficiency in relation to crop production. Criteria for scheduling
ation, ways and means of reducing run off losses.

Importance and scope of floriculture, landscaping and interior-scaping. History, theory and principles
of landscape, planting and lawns. Beautification of slopes, forests and wastelands. Layout of home gardens
and public parks. Propagation of ornamentals. Cultural requirement of ornamental trees, shrubs, climbers,
bulbs and annuals for winter and summer season. Production technology and post harvest management of cut
flowers, bulbs, house plants and bedding plants.