

PART- (B) SYLLABUS OF HORTICULTURE

UNIT -1

Fundamentals of subject

General introduction of subject; area , production, scope and importance, future and export possibilities, distribution of horticultural crops in world, in country and states, classification of crops, nutritional value, role in human diet, climatic regions and crop zones of horticultural crops. Role of different funding and administrative bodies working in this field. Use of internet in Horticulture. Horticultural tools and machineries. Integrated weed management (IWM), Integrated pest management (IPM) and Integrated nutrient management in Horticultural crops. Mechanization in Horticulture.

UNIT -2

Propagation of horticulture crops

Propagation of horticultural crops; Principles, methods and techniques of multiplying plants in nursery, mother plant, rootstock –scion relationship, Indoor, outdoor plants, pot culture, micro propagation technique, aftercare and health management of developed plants at home as well as at commercial scale , Bonsai art of miniature, Training and pruning methods and their application on various crops.

UNIT -3

Controlled environmental horticulture

Definition and concept, Scope, importance, limitations, principles and techniques of protected cultivation of flowers and vegetables, application of techniques in commercial production, Green house designing , types of structure, layout plan, choice of crops, production and maintenance of various crops under protected conditions, production problems and their management . Zero energy chamber and its utility,

UNIT -4

Production technology of Fruits;

Origin, history, area & production, nutritive values, climatic requirement of crop, improved variety and hybrid, Future prospects, export prospects, land climate, selection of varieties, complete production technology for quality production of the crops I e. mango, guava, banana, Citrus fruits (Orange, Lemon etc), papaya, grapes, ber, amla, jack fruit, litchi, apple, pear, peach, apricot, plum, cherry, persimmon, strawberry, kiwi, Queens land nut (Macadamia nut), almond, walnut, pecan nut, hazel nut and chest nut, Rubber, Coconut, Arecanut, Oil palm, Palmyrah palm, Cacao, Cashews, Coffee, Tea and Date palm

UNIT -5

Production technology Vegetable, spices condiments crops, Medicinal and aromatic plants;

History, scope and importance, present status, area and production, uses, export potential and role of spices and condiments in national economy. Classification, soil and climate, propagation-seed, vegetative and micro propagation systems, sowing and methods of planting, varieties, nutritional management, irrigation practices, weed control, mulching and cover cropping. Training and pruning practices, role of growth regulators, shade crops and shade regulation of ; Cole crops , cucurbitaceous crops, solanaceous crops, okra , broccoli, Brussels sprouts, vegetable kale, lettuce, palak, leek , ,garlic, onion, radish, carrot, peas, beans, turnip, beet root, rhubarb ,asparagus, globe artichoke, coriander, fenugreek, cumin, cardamom, pepper, betel vine, ginger, turmeric, clove, Nutmeg, cinnamon, curry leaf, dill, celery, bishops, saffron, vanilla , theme and rosebary, Khus, Lemon, Grass, Tulsi, Roses.

UNIT - 6

Ornamental crops and Commercial floriculture;

General knowledge about, Soil and climate, varieties and hybrids , nursery raising and after care, training and pruning practices, crop nutrition, method of propagation, rootstocks ,use of plant growth regulators , plant protection measures , post harvest management, value addition , marketing and cost of cultivation of important floriculture crops ;Roses ,Marigold , Chrysanthemum ,orchids ,carnation , gladiolus, jasmine, crossandra, anthurium , dahlia , tuberose, bird of paradise, China aster, gerbera, and other foliage filler plants) and seasonal cut flowers

UNIT -7

land scape gardening and beautification of area ;

History of gardening, famous garden in India and abroad, Principles types / categories and styles of landscape gardens , criteria for selection of plants for different purposes in gardens . Elements of landscape design, (Principles of landscape design, Factor affecting landscape design, Xeriscaping and its application in different zones, Lawn grasses , aftercare of lawns, shrubbery border, edging and hedging plants there , plant protection measures maintenance . Knowledge about other ornamental plants.

UNIT -8

Growth and development of horticultural crops

Definitions, The role of biotic and non-living factors in the growth and development of horticultural crops, Soil management, different stages of growth and development, growth curves, Crop development and dynamics, plant growth regulators their role on crop growth and development of horticultural crops, Canopy development, growth analysis, seed and bud dormancy, causes and remedies, seed germination and test Vernalization and its application in horticulture, pruning and training, physiological basis of training and pruning ,source and sink relationship, translocation of assimilates. Physiology of seed development, flowering, fruit set, maturity and ripening. Physiological disorders, causes and their remedies

UNIT -9

Processing, value addition and management of preserved products

Concept ,importance and scope , Pre harvest and post harvest factors responsible for quality production, post harvest losses and precautions to manage them , marketing of fresh and processed and value added products , principles and methods of preserving of fresh produce , causes of spoilage of preserve product , handling , packaging , disposal and storage of preserved products of listed crops

UNIT -10

Crop enemies and protection from them

Introduction, causes of damage or losses, crop enemies- weeds ,insect pests and diseases, nature of damage, principles and methods of crop protection , biotic and abiotic factors responsible for crop health, physiological disorders and their effective managerial aspects