

# **Syllabus for Recruitment Examination of Trained Graduate Teacher**

## **Subject: Horticulture**

### **Unit 1: General Horticulture**

Horticulture – its definition and branches, importance and scope, problems of production and marketing and remedial measures. Importance of fruits and vegetables in human diet, crop diversification. Classification of horticultural crop plants and their edible parts.

### **Unit 2: Basic Horticulture**

Propagation, macro and micro propagation, rootstocks, propagation by seeds, cuttings, budding, layering and grafting, physiology of rooting. Nursery raising and their management.

Orchard management, location and site, planning and layout, pruning and training, soils management, essential elements and their functions and deficiency, role of micro nutrients and their deficiency problems, manures and fertilizers, weeds management, pests and diseases management, irrigation and drainage systems. Planting systems, multistorey cropping, intercropping, mulching, wind break, protection from frost and sunburn.

### **Unit 3: Crop Physiology**

Plant growth and development, Photoperiodism and flowering, vernalization, seed and bud dormancy, bearing behaviour, fruitset seedlessness, fruit thinning and fruit drop, physiological disorders of horticultural crops, hormones and plant growth regulators and their roles.

### **Unit 4: Genetics and Plant breeding**

Genetics and plant breeding, heredity and variation, Mendel's laws of inheritance, origin and distribution of horticultural crops, principles and methods of plant breeding for improvement of major horticultural crops, hybridization, heterosis and its exploitation, male sterility and self incompatibility and polyploidy.

Seed technology, classes of seeds, production, processing and testing of seeds. Role of national and state seed agencies in production, processing and marketing of improved seeds.

### **Unit 5: Pomology**

Origin, history and production technology of important fruits such as mango, banana, citrus, guava, papaya, grapes, pineapple, litchi, apple, pear, peach, almond, aonla, walnut, etc. with special reference to climate, soil, propagation, cultivars, nutrition, irrigation, weeds control, pests and diseases, harvesting and marketing.

### **Unit 6: Olericulture**

Origin, history and production technology of important vegetables, spices and condiments like tomato, brinjal, chillies, cole crops, radish, carrot, turnip, beans, peas, potato, tapioca, okra, cucurbits, leafy vegetables, coriander, cumin, turmeric, ginger, onion, garlic, etc. with special reference to climate, soil, seed rate, cultivars, nutrition, irrigation weeds control, pests and diseases and other management practices.

### **Unit 7: Plantation crops, medicinal and aromatic plants**

Origin, history and production technology of important plantation crops like coconut, arecanut, pepper, cardamom, rubber, tea, coffee, cashew, etc. with special reference to climate, soil, seed production, cultivars, nutrition, irrigation and other management practices.

Origin, history and production technology of important aromatic and medicinal crops like palmarosa, lemon grass, isabgol, vetiver, cinchona, belladonna, rauwolfia, discorea, etc. with special reference to climate, soil, seed production, cultivars, nutrition, irrigation and other management practices.

### **Unit 8: Landscape Gardening**

History of gardening in India, styles of gardening, their principles and practices with special reference to Mughal, Japanese and English gardens, elements and features of landscape gardening. Classification and utilization of ornamental trees, shrubs, climbers, herbaceous plants, perennial, annuals, bulbous and water loving plants, cactus, succulents and foliage plants, bonsai, home gardens, lawn and topiary.

### **Unit 9: Floriculture**

Origin, history and production of important flower crops like rose, orchids, aster, marigold, chrysanthemum, gladiolus, carnation, gerbera, jasmine, dahlia, tuberose, lilies, etc. with special reference to climate, soil, propagation, cultivars, planting methods, nutrition, irrigation, aftercare, etc. prolonging storage and vase life of cut flowers and their utilization.

### **Unit 10: Post harvest technology and Value-addition**

Post harvest technologies, harvesting with reference to maturity indices, techniques, sorting, grading, pre-cooling, treatments to prolong shelf life and important disorders. Cold chain storage systems, physicochemical changes and quality of horticultural produces after harvesting, processing of horticultural produce. Important value-added products from fruits and vegetables. Principles and methods of fruit and vegetable preservation, methods and equipments for processing. Preparation, packaging and marketing of value-added products like jellies, jams, ketchup, pickles, squashes, marmalade, etc.

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