

B.Sc. I Semester, *HORTICULTURE*

Paper – Basic of Horticulture

Maximum Marks : 85

Unit-I

1. Horticulture-definition, branches, scope , importance, background, present status and problems.
2. Interrelation of horticulture to agriculture and other discipline of science.
3. Significance of horticulture to mankind.

Unit-2

1. Seed definition - Types and different classes of horticultural seed.
2. Seed Structure - Dicot and Monocot seed.
3. Seed germination - Types and requirements for germination.

Unit-3

1. Characteristics of good quality seeds.
2. Determination of seed quality and its factors.
3. Purity, vigor, viability and factors affecting seeds. Rouging, isolation distance, thinning, procedures.
4. Seed treatment – Methods of seed treatment .

Unit-4

1. Seed showing method.
2. Irrigation-systems and methods, water requirement for plant.
3. Drainage - Objectives, system of drainage, difference between irrigation and drainage.
4. Manures - FYM, compost, green manures.
5. Fertilizers - Definition, classification.
6. Pest and disease and their control

Unit-5

1. Plant propagation by seeds/sexual Vegetative propagation
2. Advantages and Disadvantages of sexual propagation.
3. Advantages and Disadvantages of vegetative propagation.
4. Method of vegetative propagation - Rootage - cutting, layering
Graftage - grafting, budding

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B.Sc. II Semester, *HORTICULTURE*

Paper – Fruit and Vegetable Production

Maximum Marks : 85

Unit-I

1. Package of practices for the cultivation of major fruits.

- a) Mango b) Guava c) Citrus
d) Papaya e) Banana

Unit-2

1. Package of practices for the cultivation of major fruits.

- (a) Grape (b) Pineapple
(c) Ber (d) Aonla (e) Pomegranate
(f) Custard apple (g) Cashew nut (h) Fig

Unit-3

1. Package of practices for the cultivation of major vegetable –

- (a) Potato (b) Onion (c) Garlic
(d) Ginger (e) Sweet potato
(f) Turmeric (g) Radish (h) Carrot

Unit-4

1. Package of practices for the cultivation of major vegetable.

- (a) Brinjal (b) Chilli (c) Tomato
(d) Okra (e) Cauliflower (f) Cabbage
(g) Pea (h) Sem

Unit-5

1 Structure of flower .

2. Method of flower production of –

- (a) Rose (b) Tuberose (c) Marigold
(d) Gladiolus (e) Dahlia (f) Jasmine

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Unit-I

- Orchard – Establishment.
(a) Selection of site (b) Selection of fruit (c) Layout
(d) Preliminary operation (e) plantation (f) Pruning
(g) Training (h) Wind breaker
- Care and Management of orchard.

Unit - II

- Vegetable farm- classification of vegetables.
- Establishment and layout of vegetable farm.
- Ornamental garden.
- Kitchen/home gardening.

Unit - III

- Seed bed – Characteristics of seed bed
- Nursery - Importance, development
- Establishment and layout of nursery.
- Working and management of nursery.
- Green house

Unit IV

- Horticultural tools-
(a) Layout tools (b) Intercultural tools
(c) Plantation tools (d) Thinning and Heading tools
(e) Packing tools (f) Irrigation tools
(g) Spray and Dusting tools
- lawn - (a) Selection of site (b) Characteristics of planned good lawn.

Unit V

- Weeds Definition of characteristics and their importance in Agriculture.
- Classification of weeds and crop-weed relationship.
- Herbicides – Types, time of application.
- Terminologies:
(a) Active ingredients (b) Acid equivalent
(c) Polarity: Polar and non-polar (d) LD-50 and ED 50 values for crops.

- Unit-I (Farming Systems)**
1. Importance of sustainable horticultural farming system.
 2. Principle of successful farming system.
- Studies on various system of farming:**
- (i) Intensive farming
 - (ii) Extensive farming
 - (iii) Cooperative farming
 - (iv) Collective farming
 - (v) Capitalistic farming
- Unit-II**
1. **Study of types of farming:**
 - (i) Diversified farming
 - (ii) Specialized farming
 - (iii) Mixed farming
 - (iv) Ranching
 - (v) Irrigated farming
 - (vi) Dryland horticulture
 - (vii) Experimental farms
 - (viii) Demonstration farms
 - (ix) Instructional farms
 2. **Factors determining the type of farming with emphasis on their merits and demerits**
 - (a) Physical factors: climate, soils and topography
 - (b) Economic factors
 - (c) Social factors
- Unit-III**
- Cropping system:**
1. (i) Definition and importance of cropping systems. (ii) Comparison of farming systems
- Types of cropping systems:**
- (i) Mixed cropping : types , merits, principles and demerits
 - (ii) Intensive cropping - Definition, object, pre-requisites and methods
- Unit-IV**
1. **Multiple cropping :**
 - (i) Relay cropping
 - (ii) Over lapping system of cropping
 2. **Intercropping:**
 - (i) Definition and comparison between intercropping and mixed cropping
 - (ii) Types of intercropping - parallel cropping ,companion cropping, synergistic cropping
 3. **Cropping system interaction with,**
 - (i) Farm resources
 - (ii) Technology
 - (iii) Aerial environment
 - (iv) Edaphic environment
- Unit-V**
1. Components of cropping system-
 - (i) Environment: climate, soil and biological components
 - (ii) Farms resources - land: Irrigation,
 - (iii) Power: manual and mechanical
 2. Crop rotation-definition, principles, advantages selection of crop rotation.

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B.Sc. V Semester, *HORTICULTURE*

Paper – Soil Productivity & Agro forestry

Maximum Marks : 85

Unit-I

1. Soil –Definition
2. Composition and formation of Soil.
3. Physical, chemical and biological properties of Soil.

Unit-II

1. Soil Erosion - Definition, causes of erosion, Soil water relationship.
2. Factor affecting soil erosion.
3. Classification of soil on the basis of water holding capacity .
4. Dryland, wetlands, wasteland, marshy lands

Unit-III

1. Principles of soil fertility, Effect of chemical fertilizers and bio fertilizers on soil quality.
2. Soil conservation- planning, water shed management
5. Methods of soil conservation, rainfed agriculture

Unit-IV

1. Plant nutrition-essential elements for plant nutrient, primary element, secondary element
2. Deficiency symptoms of micro and macronutrients nutrients .
3. Method of fertilizer application
4. Tillage- types, object, implements.

Unit-V

1. Agro-forestry- principle ,object and agro-forestry in India.
2. Agro-forestry system ,selection of tree, future of agro-forestry.
3. International council of research in agro-forestry.
4. Social Agro - forestry – objects and principle

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B.Sc. VI Semester, *HORTICULTURE*

Paper – FRUIT PRESERVATION AND TISSUE CULTURE

Maximum Marks : 85

Unit-I

1. Fruit preservation – Definition and Advantages.
2. Limitation of fruit preservation.
3. Causes fruit and fruit products

Unit-II

1. General principles of fruit and vegetable preservation, method.
2. Fruit and vegetable preservation method- (a)Canning-process and container.
(b) Drying

Unit-III

1. Preserved products and their marketing- (a) Pickles
(b) Jam
(c) Jelly
(d) Sauce
2. Agriculture economics –agriculture finance, co-opratives.

Unit-VI -

1. History of plant tissue culture in brief, Totipotency.
2. Techniques of tissue culture - Sterilization techniques, Nutrient media.
3. Callus culture, Anther culture, Meristem culture ,embryo culture.

Unit-V

1. Somatic hybridization
2. Achievements in raising horticulture crops by using tissue culture techniques.
3. Significance of tissue culture in horticulture

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