

PANJAB UNIVERSITY CHANDIGARH- 160 014 (INDIA)

(Established under the Punjab University Act VII of 1947-enacted by the Govt. of India)



**FACULTY OF DAIRYING ANIMAL
HUSBANDRY & AGRICULTURE**

SYLLABI

FOR

FLORICULTURE & LANDSCAPING

CERTIFICATE & DIPLOMA

ADD-ON COURSE

EXAMINATIONS 2021

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Outlines of tests, syllabi and courses of reading for Floriculture & Landscaping – Certificate- Add-on Course

Paper I: HORTICULTURE & LANDSCAPING

Total Marks: 100
Theory : 75
Practical : 25

Instructions for paper setter:

Attempt any five questions.

THEORY

- a) Principles of horticulture and landscaping designs, layout of home-gardens and indoor-scaping; formal and informal garden designs.
- b) Propagation Techniques: Establishment of nursery, nursery making, preparation of beds. Reproduction/propagation through seeds, seed characteristics, seed viability and methods of testing, seed dormancy, its reasons and methods of breaking dormancy; vegetative means of propagation : through bulbs, stem cutting, air layering, budding etc.
- c) Background characteristics of formal and informal gardens.
- d) Cultivation and landscaping, utilization of important Trees, Shrubs, Climbers, Ground covers, Potted and Shade loving plants.
- e) Lawn Management.
- f) Protection, care and weed management of Horticultural crops.
- g) Cultivation of common Annual, Pot culture, Adding Colour.
- h) Making of Bonsai.

PRACTICALS

1. Identification of trees, shrubs, creepers & indoor plants.
2. Raising of seedlings.
3. Maintenance of tree.
4. Field trips to forest and preparation of herbarium.
5. Layout of home-gardens and lawns etc.

BOOKS:

1. Salaria, A.S. (1999), Horticulture at Glance.M/s Jain Brothers, New Delhi.
2. Des Raj (2002). Floriculture and Landscaping. 1st Edition, Kalyani Publishers, Ludhiana, India.
3. Des Raj (2006). Objectives Floriculture and Landscaping, 1st Edition, Kalyani Publishers, Ludhiana, India.
4. Complete Gardening in India – 2009- Gopaldaswami lyenger ICAR, New Delhi.
5. Beautiful trees and gardens -2008- M.S. Randhawa, National Book Trust- New Delhi.
6. Council of Tree and Landscape Appraisers- 1992. Guide for Plant Appraisal. International; Society of Arboriculture, Savoy, IL.
7. Pirone, P.P., J.R. Hartman, M.A. Sall and T.P. Pirone, 1988. Tree Maintenance, 6th ed. Oxford University Press, New York, NY.
8. Introduction to Ornament Horticulture by Dr. J.S. Arora.

Paper II : FLORICULTURE AND COMMERCIAL PRODUCTION OF FLOWERS

Total Marks: 100

Theory : 75

Practical : 25

Instructions for paper setter:

Attempt any five questions.

THEORY

- a) Elementary: Scope and significance of floriculture. Nomenclature and identification of floricultural plants/crops.
- b) History and Principles of floriculture.
- c) Establishment of Green houses.
- d) Tissue Culture: Role, Significance and basic techniques of *IN VITRO* propagation.
- e) Commercial floriculture cultivation practices of – Gladioli Rose, Carnation, Marigold.
- f) Post harvest technology, transportation and marketing.
- g) Propagation, storage and transport of seeds and buds.
- h) Common diseases and their control.

PRACTICALS

1. Propagation and cultural practices of Chrysanthemum, Gladiolus, rose Marigold, Carnation, Chameli and seasonal annuals and bulbs.
2. Field trips to nursery, forest, propagation centres and collection for herbarium.
3. Raising of seedlings.
4. Identification of Important trees, climbers and shrubs, herbaceous.
5. Maintenance of potted plants.

BOOKS:

1. Randhawa, M.S. (2008), Flowers and Trees, National Book Trust – New Delhi.
2. Des Raj (2002). Floriculture and Landscaping. 1st Edition, Kalyani Publishers, Ludhiana, India.
3. Des Raj (2006). Objectives of Floriculture and Landscaping, 1st Edition, Kalyani Publishers, Ludhiana, India.
4. Hartmann, H.D., Kester, D.E., Davies Jr. F.T., and Geneve, R.L., (1997). Plant Propagation, Principles and Practices. Prentice-Hall India Pvt. Ltd. New Delhi.

Outlines of tests, syllabi and courses of reading for Floriculture & Landscaping – Diploma - Add-on Course

Paper I: LANDSCAPING AND ORNAMENTAL GARDENING

Total Marks: 100
Theory : 75
Practical : 25

Instructions for paper setter:

Attempt any five questions.

Objective: Familiarization with principles and practices of landscaping and ornamental gardening .

THEORY

- i) Cultivation of Important biennials, herbaceous perennials and bulbous plants.
- j) Landscape designs, types of Gardens, English, Mughal, Japanese, Spanish, Buddha Gardens; styles of Garden.
- k) Garden plant components, arboretum, shrubbery, fernery, palmatum, arches and pergolas, edges and hedges, climbers and creepers, cacti and succulents, herbs, annuals, flower borders and beds, ground covers, carpet beds, bamboo groves; Production technology for selected ornamental plants.
- l) Lawn, Establishment and maintenance, special types of gardens, vertical garden, roof garden, bog garden, sunken garden, rock garden, clock garden, colour wheels, temple garden, sacred groves.
- m) Bio-aesthetic planning, eco-tourism, them parks, indoor gardening, therapeutic gardening, non-plant components, water scaping, xeriscaping and hardscaping.

PRACTICALS

6. Selection of ornamentals plants, practices in preparing designs for home gardens, industrial gardens, institutional gardens, corporate, avenue planting.
7. Propagation of plants through sexual and asexual methods & collection of seeds of both winter and summer flowers.
8. Project preparation on landscaping for different situations.
9. Visit to parks and botanical gardens.
10. Case study on commercial landscape gardens.

Suggested Readings:

- i. Arora J.S. 2006, Introductory Ornamental Horticulture, Kalyani, Ludhiana.
- ii. Bhattacharjee S.K. 2006. Advances in Ornamental Horticulture Vols. 1-VI. Pointer Publ.
- iii. Bose T.K., Maiti R.G., Dhua R.S. & Das P. 1999. Floriculture and Landscaping. Naya Prakash.
- iv. Bose T.K. & Yadav L.P. 1989. Commercial Flowers. Naya Prakash.
- v. Chadha K. L. & Choudhury B. 1992. Ornamental Horticulture in India. ICAR.
- vi. George S & Peter K.V. 2008, Plants in a Garden. New India Publ. Agency.
- vii. Randhawa G.S. & Mukhopadhyay A. 1986. Floriculture in India Allied Publ.
- viii. Ready S., Janakiram B, Balaji T, Kulkarni S & Misra R.L. 2007. Hightech Floriculture. Indian Society of ornamental Horticulture, New Delhi.
- ix. Shella V.L. 2007, Flowers in Trade. New India Publ. Agency.

Paper II : ADVANCEDS IN FLOWER PRODUCTION TECHNOLOGY

Total Marks: 100

Theory : 75

Practical : 25

Instructions for paper setter:

Attempt any five questions.

Objective: To keep abreast with latest developments and trends in production technology of flower crops.

THEORY

- i) Commercial flower production; Scope and importance; global Scenario in cut flower production and trade varietal wealth and diversity; soil and Environment; Special characteristics and requirements; cut flower, loose flowers and dry flowers.
- j) Propagation and multiplication; Greenhouse management; Soil/media decontamination techniques; Micro-irrigation; nutrition and fertigation; slow release fertilizers and biofertilizers; influence of environmental parameters, light, temperature, moisture, humidity and CO₂ on growth and flowering; regulation for quality flowers.
- k) Flower forcing and year-round flowering through physiological interventions; Chemical regulation; Environmental manipulation & methods of delay flower opening.
- l) Crop specific practices – Gerbera, Liliams, Jasminum sp., Tuberose
- m) Floral oil industry, floral concrete production, extraction methods, recent advances.

Practical

- (i) Varietal wealth in flower crops; Greenhouse management, Soil decontamination techniques; Micro-irrigation; Nutrition and fertigation.
- (ii) Special practices: Pinching, netting, disbudding, defoliation and chemical pruning; Photoperiodic and chemical induction of flowering; Assessing harvest indices.
- (iii) Tissue analysis; Preparation of floral decorative; Extraction of floral concrete and oils; case studies
- (iv) Visit to commercial cut flower units.

Suggested Readings:

- i. Arora J.S. 2006, Introductory Ornamental Horticulture, Kalyani, Ludhiana.
- ii. Bhattacharjee S.K. 2006. Advances in Ornamental Horticulture Vols. 1-VI. Pointer Publ.
- iii. Bose T.K., Maiti R.G., Dhua R.S. & Das P. 1999. Floriculture and Landscaping. Naya Prakash.
- iv. Bose T.K. & Yadav L.P. 1989. Commercial Flowers. Naya Prakash.
- v. Chadha K. L. & Choudhury B. 1992. Ornamental Horticulture in India. ICAR.
- vi. George S. & Peter K.V. 2008, Plants in a Garden. New India Publ. Agency.
- vii. Randhawa G.S. & Mukhopadhyay A. 1986. Floriculture in India Allied Publ.
- viii. Ready S., Janakiram B, Balaji T, Kulkarni S & Misra R.L. 2007. Hightech Floriculture. Indian Society of Ornamental Horticulture, New Delhi.
- ix. Shella V.L. 2007, Flowers in Trade. New India Publ. Agency.
