SRR & CVR Government Degree College (A)

An Autonomous & ISO 9001: 2015 Certified Institution:: Ranked by NIRF in 101-150 band at NIRF-2020 & 151-200 band in NIRF 2019 NAAC accredited Institution with grade B+ with C.G.P.A 2.6 during March, 2017

Machavaram, Vijayawada, Krishna District, AP-520 004

Board of Studies - AY:2022-23

HORTICULTURE

DEPARTMENT OF BOTANY

SRR & CVR Government Degree College(A)

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Department of Botany

Report on Board of studies Meeting for UG Programmes for AY 2022-2023

The Board of Studies meeting in Horticulture was convened on 7.7.2022 at 10.30 A.m. in the Department of Botany (Botany Lab 2), under Chairmanship of Ms. G. Swapna , In- Charge of the Department, SRR & CVR Govt. Degree College (Autonomous), Vijayawada – 520004 for the Academic year 2022-2023 .

SRR & CVR Govt. Degree College (Autonomous), Vijayawada, is one of the prestigious educational institutions, located in a historically important place like Vijayawada in Krishna District, Andhra Pradesh. Vijayawada is a place of historical and cultural significance and importance. In the same way SRR & CVR Govt. Degree College, has also acquired its significance and prominence in and around Vijayawada by molding the lives of many students to become great personalities. This college is named after late Sri Raja Rangayyappa Rao and late Sri Chunduru Venkata Reddy, who have been great and noble donors of the city Vijayawada, by whose generosity the college has reached and attained such and this elevated status by way of shaping the lives of many generations of students making them worthy citizens of the country. This college has acquired great standards academically by the contributions of great teachers as well because in the history of any educational institution its teachers play a vital role. The college was established in 1937. It offers undergraduate and postgraduate academic programs. The institution was accredited with grade B+ with C.G.P.A 2.6 during March, 2017 by NAAC and got ISO 9001: 2015 certificate during 2019 and ranked by NIRF in 101-150 band at NIRF-2020 & 151-200 band in NIRF 2019.

The Department of Botany is the oldest Department in the college. The Department offers two B.Sc programmes, BSc BZC (Botany,Zoology,Chemistry) program in both Telugu and English media and B.SC BHC(Botany,Horticulture,Chemistry)program in English medium. The Department has continually been striving for excellence in teaching and research. CBCS has been implemented for both UG B.Sc (BZC) and B.Sc (BHC) programmes. The Department has its own well established and well equipped Labs along with a 24x7 internet facility. In the 2021-2022 academic year the department got an opportunity to offer a B.Sc Horticulture program on an autonomous platform . The department is ready to utilize this golden opportunity to offer a new UG Program on academic autonomous status. Definitely the department will frame the curriculum on Learning Outcomes-based Framework to enrich knowledge in the area of Plant Sciences and Horticulture.

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Board of Studies Composition - Horticulture

S.No	Name of the Resource person	Designation
1	Ms. G.Swapna In-charge of the Department Department of Botany	Chairman of BOS
2	Dr.T.Rose Mary HOD, Department of Botany Andhra Loyola College, Vijayawada-08 Mobile: 9989892440	University Nominee
3	Dr.R.V.Sujatha, Associate Professor, Department of Agricultural Economics Dr.YSR Horticultural University, Venkataramannagudem, West Godavari District Mobile: 9666621341	Subject Expert
4	Mr. K.GaniRaju Lecturer in Botany Government College (A), Rajahmundry-533105 Mobile:9948088250	Subject Expert
5	Dr. S. Siva Rama Krishna ((Industry nominee) Jeevaka Ayurveda, Tenali Mobile: 9441898805 e-mail:srksamala@gmail.com	Industrialist
6	GoriparthiVenkataSai Ram Yadav Mobile: 9989059219	Alumni
7	Mrs V. Naga Padmavati Lecturer in Botany Mobile: 9182179891	Member
8	Dr. Ch. Srinivasa Reddy Lecturer in Botany Mobile: 9908721905	Member

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STRUCTURE OF HORTICULTURE

Semester	Course	Title of the Course	Hrs/Week	Credits	CIA(M)	SEE(M)	Total(M)
FIRST YEAR							
I	1	Fundamentals of Horticulture and Soil science(T)	4	4	40	60	100
		Fundamentals of Horticulture and Soil science(P)	2	1	25	25	50
II	2	Plant propagation and nursery management (T)	4	4	40	60	100
		Plant propagation and nursery management (P)	2	1	25	25	50
SECOND YEAR							
III	3	Basics of Vegetable science (T)	4	4	40	60	100
		Basics of vegetable science (P)	2	1	25	25	50
IV	4	Basics of fruit science (T)	4	4	40	60	100
		Basics of fruit science (P)	2	1	25	25	50
	5	Pests and diseases of horticultural crops and their management (T)	4	4	40	60	100
		Pests and diseases of horticultural crops and their management (P)	2	1	25	25	50

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Machavaram, Vijayawada, Krishna District, AP-520 004

Department of Botany

BOARD OF STUDIES MEETING FOR HORTICULTURE

AGENDA

ACADEMIC YEAR: 2022-23

The Board of Studies meeting in Horticulture was convened on 7th July 2022 at 10.30 A.m. in the Department of Botany (Botany Lab 2), under Chairmanship of Ms. G. Swapna , In- Charge of the Department, SRR & CVR Govt. Degree College (Autonomous), Vijayawada – 520004 for the Academic year 2022-2023.

Agenda

1. To Discuss the Course structure and Syllabus , suggest if any modifications and approve the Structure of the Course, syllabus , blueprint,model question paper, question banks for B.SC (Botany Horticulture Chemistry) I Semester Horticulture Paper I and II Semester Horticulture Paper II

2. To Discuss the Course structure and Syllabus , suggest if any modifications and approve the Structure of the Course, syllabus , blueprint,model question paper, question banks for the Academic Year (2022-2023) for B.SC (Botany Horticulture Chemistry) III Semester Horticulture Paper III and IV Semester Horticulture Paper IV and V .

3. To Discuss and suggest or approve a panel of names to the Academic Council for appointment of examiners and Question paper setters.

4. To discuss and suggest measures coordinating research, teaching, extension and other academic activities in the area of Horticulture

5. To suggest Proposals for Community Service/Extension Activities/Internships Projects in the area of Horticulture

6. To discuss and suggest scope/possibility of introducing new relevant market oriented skill development courses in the area of Horticulture .

7. Any other Proposal / matter with the permission of the Chair.

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Department of Botany

BOARD OF STUDIES MEETING FOR HORTICULTURE

CONDUCTED ON 7th July 2022

MINUTES

ACADEMIC YEAR: 2022-2023

The Minutes of First Board of Studies meeting in Horticulture which was convened in blended mode on 7th July 2022 at 10.30 a.m. under Chairmanship of Ms G.Swapna, the In- Charge of the department is as follows:

Minutes and Resolutions of Board of Studies Meeting

Agenda 1: To Discuss the newly proposed Horticulture Course structure and Syllabus , suggest if any modifications and approve the Structure of the Course, syllabus ,blueprint,model question paper, question banks for B.SC(Botany Horticulture Chemistry) I Semester Horticulture Paper I and II Semester Horticulture Paper II for the Admitted batch 2022-2023.

Proposal: The Chairperson, Ms G.Swapna, the In- Charge of the department welcomed the members of BoS and initiated discussion on agenda points. Ms G.Swapna , presented the proposed Horticulture Semester I and Semester II Courses structure, syllabus , model question paper,question bank,blueprint before BOS members for the approval , Suggestions and inputs if any and opened the discussion.

Discussion: The University Representative, Dr. T.Rosemary and Subject expert Dr R.V. Sujatha along with all members thoroughly examined the content of the syllabus for the two courses and framework of the courses. Then , Dr R.V Sujatha , Horticulture Subject Expert suggested some needed modifications and gave her valuable inputs in two courses. Dr R.V Sujatha felt that the syllabus for First and semester syllabus should be kept the same and there is no need for any syllabus changes . Members discussed the Community service project which is mandatory in the second semester and suggested some related services in Horticulture in Nurseries, Public parks, Public Roads and Botanical Gardens. Every other member approved the inputs and suggestions proposed by Dr R.V Sujatha , Horticulture Subject expert and the suggested changes are incorporated in the Proposed syllabus. in the form of additional inputs .

Faculty members agreed to the suggestions and took a decision to give priority for the practical work in horticulture . Mr S. Siva ramakrishna Industrialist suggested some training and workshops in areas of Horticulture and faculty members agreed, These are no notable changes in credits of courses, Blue print , Model Question papers and framework of the courses.

Resolution 1: After thorough analysis and discussion the Board members resolved to approve the Course structure and the syllabus with suggested modifications ,blueprint ,model question paper, question bank proposed for the academic year 2022-2023 for B.SC (Botany Horticulture Chemistry) I Semester Horticulture Paper I and II Semester Horticulture Paper II .

Agenda 2: To Discuss the newly proposed Horticulture Course structure and Syllabus , suggest if any modifications and approve the Structure of the Course, syllabus ,blueprint,model question paper, question banks for B.SC(Botany ,Horticulture , Chemistry) III Semester Horticulture Paper III and IV Semester Horticulture Paper IV and V for the Admitted batch 2021-2022.

Proposal: The Chairperson, Ms G.Swapna, presented newly proposed Horticulture Semester III and Semester IV Courses structure, syllabus , model question paper,question bank,blueprint before BOS members for the approval , Suggestions and inputs if any and opened the discussion.

Discussion: The University Representative, Dr. T.Rosemary and Subject expert Dr R.V. Sujatha along with all members thoroughly examined the content of the syllabus for the three courses and framework of the courses. Then , Dr R.V Sujatha , Horticulture Subject Expert suggested some needed modifications and gave her valuable inputs in three courses. Dr R.V Sujatha felt that for Horticulture students priority should be given to Practical field work than theory and each concept in horticulture should be practiced by students practically in nursery fields and Botanical Gardens . Every other member approved the inputs and suggestions proposed by Dr R.V Sujatha , Horticulture Subject expert and the suggested changes are incorporated in the Proposed syllabus.. Faculty members agreed to the suggestions and took a decision to give priority for the practical work in horticulture . Mr S. Siva Ramakrishna Industrialist suggested some training and workshops in areas of Horticulture and faculty members agreed, These are no notable changes in credits of courses, Blue print , Model Question paper and framework of the courses.

Resolution 2: After thorough analysis and discussion the Board members resolved to approve the Course structure and the syllabus with suggested modifications ,blueprint ,model question paper, question bank proposed for the academic year 2022-2023 for B.SC (Botany Horticulture Chemistry) III Semester Horticulture Paper III and IV Semester Horticulture Paper IV and V .

Agenda 3: To Discuss and suggest or approve a panel of names to the Academic council for appointment of examiners and Question paper setters.

Proposal: The chairman placed the list of Question paper setters and Examiners before the participants for seeking their approval welcoming the needed suggestions if any.

Discussion :BOS members discussed the panel of examiners and question paper setters and suggested some more names to incorporate if possible .

Resolution : Board members unanimously approved a panel of examiners and question paper setters along with some more names which were being incorporated into the proposed panel for the academic year 2022-2023.

Agenda 4 : To discuss and suggest measures coordinating research, teaching, extension and other academic activities in the department.

Proposal: Mrs V. Naga Padmavathi initiated a discussion on proposing some academic activities before the BOS Committee welcoming the needed suggestions and inputs.

Discussion :All BOS members, University Nominee and subject experts , Industrialist and Alumni members suggested extension activities like field works , Nursery activities Seminars, Group discussions, Projectworks ,Workshops, Internships in IV Semesters, Horticulture training programs on techniques , Industrial exposure hands on experience on various concepts of curriculum. Faculty members agreed to incorporate all the academic activities in the Action plans of the department .

Resolution Board members resolved to approve all academic activities which were proposed in panel discussion for the academic year 2022-2023.

Agenda 5: To suggest Proposals for Community Service/Extension Activities/ Project works /Field trips for the benefit of students and society.

Proposal: Dr R.V Sujatha Subject Expert in Horticulture initiated a discussion on proposing some extension activities before the BOS members citing the necessity of the extension activities in the areas of Horticulture

Discussion : All BOS members, University Nominee and subject experts , Industrialist and Alumni faculty members suggested extension activities like field works and study reports like Study reports on vegetable/fruit crops in a locality, Herbarium of vegetable/fruit crops , nutritional disorders of vegetable/fruit crops in a locality, diseases of vegetable/fruit crops in a locality., harvest to market for a vegetable/fruit crop ,use of fertilizers, pesticides and herbicides in a local vegetable/fruit crops field, economics of a vegetable/fruit crop in their locality, irrigation practices for vegetable/fruit crops in an area. Identification and herbarium preparation of disease

symptoms of ornamental crops/fruit crops, preparation of laminated photos of major diseases of horticultural crops /fungicides and insecticides used in horticultural crops and Visit to Horticulture University/ Research Station/ vegetable nursery/orchard/pesticide industries. Faculty members agreed to incorporate them in the action plan of the Horticulture course.

Resolution : Board members resolved to approve all the extension activities which were proposed in panel discussion for the academic year 2022-2023.

Agenda 6: To discuss and suggest scope/possibility of introducing new relevant market oriented skill development courses in the area of Horticulture .

Proposal: Ms G. Swapna and Dr Ch.Srinivasa Reddy opened the discussion by considering the possibility of market oriented skill development courses in the area of Horticulture .

Discussion : Dr R.V Sujatha Subject Expert in Horticulture and majority BOS members felt that as B.Sc Horticulture course is new initially there is a need to strengthen the core course before considering other options. .All BOS members, University Nominee and subject experts , Industrialist and Alumni agreed to it and suggested the same to strengthen the core course.

Resolution : Board members resolved to strengthen the core course primarily and did not show any interest for other market oriented new courses .

Agenda 7: Any other Proposal / matter with the permission of the Chair.
To consider and approve the Student Evaluation Policy and Procedure and split- up of CIA & SEE.

Proposal: The chairman proposed the evaluation system in each course will be 40 : 60 for Internal Continuous Internal Evaluation (CIA) and Semester End Evaluation (SEE).

Discussion: The members of BoS discussed the merits, demerits and feasibility for the implementation of (40% CIA & 60% SEE) proportion and split-up of CIA. Faculty members of the department expressed their willingness to frame question papers based on the active verbs used to frame question paper patterns on **Bloom's Taxonomy**.'

Resolution : It is resolved to approve the Student Evaluation Policy and Procedure and split-up of CIA & SEE.

(Ms G. Swapna)
Chairman, the Board of Studies

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Department of Botany

Syllabi for Courses in Semester I & II under CBCS with Learning Outcomes-based Curriculum Framework (LOCF)

FUNDAMENTALS OF HORTICULTURE AND SOIL SCIENCE

I-B.Sc., BHC	Horticulture-I	SEM-I	Course code: HORT-1321	2022-23	No. of Credits:4	No. of Hrs /Week:4

Course Outcomes:

On successful completion of this course, the students will be able to:

CO1: Understand the Horticulture divisions,Scope and potential of horticulture products , Fruit and vegetable zones in India and Andhra Pradesh.

CO2: Classify the horticulture plants based on soil and climate and understanding about olericulture and floriculture.

CO3: Illustrate different systems of planting in an orchard and predict the number of plants in a given land , pruning and training methods and procedures.

CO4: Understand the environmental factors on horticultural crops

CO5: Knowledge about integrated nutrient management and demonstrating the skills of soil testing**.**

Unit I : Introduction to Horticulture 12 Hrs.

1. Horticulture: Definition, importance of horticulture in terms of economy, production, employment generation, environmental protection and human resource development.
2. Divisions of horticulture with suitable examples and their importance.
3. Fruit and vegetable zones of India and Andhra Pradesh.
4. Export scenario and scope for Horticulture in India.

Unit II : Classification Horticulture Crops 12 Hrs.

1. Classification of horticultural crops based on soil and climatic requirements.
2. Vegetable crop gardens – Nutrition and kitchen garden – tracer garden- roof garden.
3. Gardens in floriculture – flower gardens – soil and mixed gardens; landscape Horticulture.

Unit III : Characteristics of Orchards 12 Hrs.

1. Orchard: Definition, different systems of planting orchards – square, rectangular Quincunx, hexagonal and contour.
2. Calculation of planting densities in different systems of planting.
3. Different types and methods of pruning.
4. Training: Definition, principles and objectives; merits and demerits of open and close centered, and modified leader systems.

Unit IV : Environmental factors and Horticultural crops 12 Hrs.

1. Influence of soil-Physical and chemical properties
2. Climatic factors-Light, Photoperiod, Temperature, relative humidity, Rainfall
3. Micro climate, pollution
4. Influence of biotic and abiotic stress on crop production

Unit V: Soil as a medium for plant growth **12 Hrs.**

1. Soil taxonomy, soil color, texture, and structure, other physical properties
2. Macro and micro nutrients
3. Integrated nutrient management and soil test.

Text books:

1. Prasad and Kumar (2014). Principles of Horticulture 2nd Edition Agrobios India
2. Kumar, N.(1990). Introduction to Horticulture. Rajyalakshmi Publications, Nagarkoil, Tamilnadu
3. Jithendra Singh, 2002. Basic Horticulture. Kalyani Publishers, Hyderabad
4. Kausalkumar Misra and Rajesh Kumar, 2014 Fundamentals of Horticulture, Biotech books
5. Brady Nyle C and Ray R Well 2014 Nature and Properties of Soil, Pearson Educational Inc , New Delhi

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FUNDAMENTALS OF HORTICULTURE AND SOIL SCIENCE PRACTICALS

I-B.Sc., BHC	Horticulture-I	SEM-I	Course code: HORT-1321P	2022-23	No. of Credits:1	No. of Hrs /Week:2

1. Study of features of orchard planning and layout orchard.
2. Study of tools and implements in Horticulture.
3. Identification of various Horticulture crops.
4. Lay out of the nutrition garden.
5. Preparation of nursery beds to sow vegetable seeds.
6. Layout of different Planting systems.
7. Study of different methods of pruning.
08. Preparation of fertilizer mixtures and field application.
09. Layout of different irrigation systems.
10. Identification and management of nutritional disorders in important fruit, vegetable and flower crops.
11.Visit to nearby orchards/Horticulture farms/organic farms
12. Soil sample testing

SRR & CVR GOVERNMENT DEGREE COLLEGE (A): VIJAYAWADA
I. B.Sc.,HORTICULTURE SEMESTER END EXAMINATION; Course-I
(FUNDAMENTALS OF HORTICULTURE AND SOIL SCIENCE)

Course Code : HORT-1321 **Max. Marks: 60M**
Time: 3hrs **Pass Min: 24 M**

MODEL QUESTION PAPER

SECTION-A

Answer any five of the following 5X4=20M

1. Economy Production in horticulture
2. a) Olericulture (b) Pomology
3. Kitchen garden
4. (a) Tracer garden (b) Vegetable forcing
5. (a) Quincunx orchard (b) Contour orchard
6. Modified leader system
7. Microclimate
8. Photoperiod
9. Humus
10. Soil structure

SECTION – B

Answer the following Questions 5X8=40M

9. a) Discuss about fruit and vegetable zones in Andhra Pradesh.

(OR)

b)Write an essay on export scenario of horticulture produce and its scope in India.

10.a)Describe how horticulture plants are classified based on soil requirement?

(OR)

(b) Give a brief account on vegetable crop gardens .

11. a)Describe calculation methods used in different planting systems.

(OR)

b) Explain different types and methods of pruning.

12. a) Explain the influence of soil physical and chemical properties on Horticultural crops .

(OR)

b)Give an account on the influence of biotic and abiotic stress on crop production

13. a)Give an account of Soil taxonomy

(OR)

b)Describe the Integrated nutrient management

SRR & CVR GOVERNMENT DEGREE COLLEGE (A): VIJAYAWADA
I. B.Sc., HORTICULTURE EXTERNAL PRACTICAL EXAMINATION; Course-I
(FUNDAMENTALS OF HORTICULTURE AND SOIL SCIENCE)

Course Code : HORT-1321P **Max. Marks: 25M**
Time: 2hrs **Pass Min: 10 M**

1. Identify the horticulture tool/equipment and write its uses. 6 M

2. Draw the layout of a kitchen garden. 6 M

3. An irrigation method followed for horticulture crops with a neat sketch.6M

4. Demonstration of a training method. 4 M

5. Record + viva voice 3+2=5

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I-B.Sc., BHC	Horticulture-I	SEM-I	Course code: HORT-1321	2022-23	No. of Credits:4	No. of Hrs /Week:4

FUNDAMENTALS OF HORTICULTURE AND SOIL SCIENCE
QUESTION BANK

UNIT-I

Essays

1. Explain about the Divisions of horticulture with suitable examples and their Significance.
2. Describe about Fruit and vegetable zones of India and Andhra pradesh.
3. Write an essay on Export scenario and scope for Horticulture in India

Short answers

1. Olericulture
2. Sub tropical zone of fruit crops
3. Horticulture: Economy Production
4. Pomology

UNIT-II

Essays

1. Describe the classification of horticultural crops based on soil conditions.
2. Explain the types of gardens in Floriculture
3. Give a brief account on vegetable crop gardens .

Short answers

1. Kitchen Garden
2. Tracer Garden
3. Temperate crops
4. Vegetable forcing

UNIT-III

Essays

1. What is Orchard and explain different types of planting orchards.
2. Describe the calculation of planting densities in different systems of planting.
3. Explain the different types and methods of pruning

Short answers

1. Contour orchard system
2. Modified leader system
3. open and close centered training
4. Quincunx Orchard system

UNIT-IV

Essays

1. Explain the influence of soil physical and chemical properties on Horticultural crops .
2. Give an account on the influence of biotic and abiotic stress on crop production
3. Explain the effects of Light and Temperature on Horticultural crops.

Short Answers

1. Microclimate
2. Photoperiod
3. Heavy metal stress
4. Nematodes

UNIT-V

Essays

1. Give an account of Soil taxonomy
2. Describe the Integrated nutrient management
3. Write an essay on soil micronutrients

Short Answers

1. Soil test
2. Soil structure
3. Humus
4. Molybdenum

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I-B.Sc., BHC	Horticulture-II	SEM-II	Course code :HORT-2321	2022-23	No. of Credits:4	No. of Hrs /Week:4

PLANT PROPAGATION AND NURSERY MANAGEMENT

On successful completion of this course, the students will be able to:

Course Outcomes :

CO1: Demonstrate skills on vegetative propagation of plants.

CO2: Explain sexual and asexual propagation methods of plants.

CO3: Demonstrate the techniques on raising of different types of nursery beds , role of various propagation structures in raising horticulture plants.

CO4: Understand the regulation to establish a plant nursery, quality parameters , different routine activities in a nursery.

CO5: Understand the economics of a plant nursery and can maintain necessary records.

Unit- 1 : Vegetative propagation techniques 12 Hrs.

1. Introduction, principles and classification of plant propagation methods
2. Cuttings: Definition, propagation by root, leaf and stem cuttings.
3. Layering : Definition, techniques of simple, serpentine, mound, trench and air layering.
4. Grafting : Definition; approach and detached scion (Veneer, whip, cleft, side and bark) grafting techniques.
5. Budding : Definition; techniques of T- , patch and chip budding.

Unit -2: Sexual propagation 12 Hrs.

1. Sexual propagation – advantages and disadvantages.
2. Seed germination, process of seed germination; factors affecting seed germination
3. Pre-germination treatments and viability tests; sowing methods of seeds.
4. Polyembryony in propagation of *Opuntia*, trifoliate orange, mango and *Citrus*.

Unit -3: Asexual propagation 12 Hrs.

1. Asexual propagation – advantages and disadvantages.
2. Using bulbs, corms, tubers and rhizomes to raise a nursery.
3. Stolons, runners and offsets in raising nursery.
4. Apomixis : Definition; role of apomictics in propagation of apple, mangosteen and *Citrus*.

Unit – 4 : Basic requirements of a nursery **12 Hrs.**

1. Plant nursery: Definition, importance; Basic facilities for a nursery; layout and components of a good nursery.
2. Nursery beds – types, their merits and demerits; precautions to be taken during preparation.
3. Brief account of growing media; nursery tools and implements.
4. Containers for plant nursery.
5. Brief account of plant propagation structures.

Unit -5: Nursery management **12 Hrs.**

1. Bureau of Indian Standards (BIS-2008) related to nursery; guidelines for nursery raising.
2. Nursery accreditation and Certification.
3. Seasonal activities and routine operations in a nursery; watering, weeding and control of pests and diseases.
4. Common possible errors in nursery activities.
5. Economics of nursery development and record maintenance; online nursery information and sales systems.

Text Books:

1. Sadhu . M .K. (1996). Plant propagation, New Age International Publishers, New Delhi
2. Sarma. R. R. (2002). Propagation of Horticultural crops : Principles and practices Kalyani Publishers, New Delhi
3. Hartman, H.T. and D.E. Kester (1976). Plant propagation. Principles and Practices, Prentice Hall of India Pvt. Limited, Mumbai
4. Ratha Krishnan, P. (2014). Plant Nursery Management: Principles and Practices. Central Arid Zone Research Institute (ICAR), Jodhpur

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I-B.Sc., BHC	Horticulture-II	SEM-II	Course code: HORT-2321P	2022-23	No. of Credits:1	No. of Hrs /Week:2

PLANT PROPAGATION AND NURSERY MANAGEMENT

Practical:

1. Observations on causes for dormancy in seeds and vegetative propagules.
2. Methods of breaking dormancy in seeds
3. Media for propagation of plants in nursery beds, pots and Mist chamber.
4. Preparation of nursery beds and sowing of seeds, Raising of rootstock.
6. Preparation of plant material for potting, Hardening of plants in the nursery.
8. Practicing different types of vegetative propagation techniques - cutting, layering, grafting and budding.
9. Seed viability test

SRR & CVR GOVERNMENT DEGREE COLLEGE (A): VIJAYAWADA
I. B.Sc.,HORTICULTURE SEMESTER END EXAMINATION; Course-II
(PLANT PROPAGATION AND NURSERY MANAGEMENT)

Course Code : HORT-2321 **Max. Marks: 60M**
Time: 3hrs **Pass Min: 24 M**

MODEL QUESTION PAPER
SECTION-A

Answer any five of the following 5X4=20M

1. Stem cuttings
2. Chip budding
3. Seed viability
4. Polyembryony
5. Offsets
6. Mist chamber
7. Nursery Media
8. BIS 2008 standards
9. Economics of nursery development
10. Asexual Propagation

SECTION – B

ANSWER THE FOLLOWING 5X8-40M

9. a)Describe the different types of layering techniques with suitable examples (OR)
   b) What is grafting ? Explain the various methods of Grafting .
10. Describe the Seed germination, process of seed germination and factors affecting seed germination
   (OR)
   b) Explain the advantages and disadvantages of Sexual propagation.

11. Explain the role of apomictics in propagation of apple, mangosteen and *Citrus*.
   (OR)
   b)Explain the usage of bulbs, corms, tubers and rhizomes to raise a nursery.

12. (a) Explain the Nursery beds types, their merits and demerits and precautions to be taken during preparation.
   (OR)
   b) Explain the layout and components of a good nursery.

13. (a) Explain about online nursery information and sales systems

(OR)

b) Describe the Seasonal activities and routine operations in a nursery;

SRR & CVR GOVERNMENT DEGREE COLLEGE (A): VIJAYAWADA
I. B.Sc., HORTICULTURE EXTERNAL PRACTICAL EXAMINATION; Course-II
(PLANT PROPAGATION AND NURSERY MANAGEMENT)

Course Code : HORT-2321 P **Max. Marks: 25M**
Time: 2hrs **Pass Min: 10 M**

1. Demonstrate methods to break seed dormancy. 5 M
2. Demonstrate a method of vegetative propagation. 5 M
3. Demonstrate routine practices in a nursery 4M
4. Identify the tool/ equipment used in horticulture 3× 2 = 6M
5. Record + viva voice 3+2=5M

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I-B.Sc., BHC	**Horticulture-II**	**SEM-II**	**Course code: HORT-2321**	**2022-2023**

(PLANT PROPAGATION AND NURSERY MANAGEMENT)
QUESTION BANK
UNIT-I

Essays

1. Describe the different types of layering techniques with suitable examples
2. What is grafting ? Explain the various methods of Grafting
3. Explain the principles and classification of plant propagation methods

Short answers

1. Stem cuttings
2. Air layering
3. Cleft grafting
4. Chip budding

UNIT-II

Essays

1. Describe the process of seed germination and factors affecting seed germination
2. Explain the advantages and disadvantages of Sexual propagation.
3. Explain about Polyembryony in propagation of orange, mango and citrus

Short answers

5. Seed viability
6. Polyembryony
7. Pre germination treatment of seeds

8. Sowing methods

UNIT-III

Essays

1. Explain the role of apomictics in propagation of apple, mangosteen and *Citrus*.
2. Explain the usage of bulbs, corms, tubers and rhizomes to raise a nursery.
3. What is Asexual propagation and explain the advantages and disadvantages.

Short answers

5. Asexual Propagation
6. Offsets
7. Stolons
8. Tubers

UNIT-IV

Essay

1 Explain the Nursery beds types, their merits and demerits and precautions to be taken during preparation.
2. Explain the layout and components of a good nursery.
3. Give a Brief account of growing media; nursery tools and implements.

Short Answers

5. Mist chamber
6. Container
7. Trowel
8. Shovel

UNIT-V

Essay

1 Explain about online nursery information and sales systems
2. Describe the Seasonal activities and routine operations in a nursery;
3. Give a brief account on Nursery accreditation and Certification.

Short Answer

5. Weeding
6. BIS 2008
7. Control of Pests
8. Economics of nursery development

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II-B.Sc., BHC	Horticulture-III	SEM-III	Course code	2022-23	No. of Credits:4	No. of Hrs /Week:4

Basics of Vegetable Science (Olericulture)

On successful completion of this course, the students will be able to:

Course Outcomes :

CO1: Distinguish the growing of vegetables according to season and climate

CO2: Get detailed knowledge on cultivation aspects of different vegetables

CO3: Understand and explain the special intercultural operations done in vegetable crops

CO4: Understand morphology and taxonomy of different vegetable crops

CO5: Study different varieties of vegetable crops

CO6: Identify the diseases and pests of vegetable crops and their management

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Unit – 1 : Introduction to Vegetable crops **12 Hrs.**

1. Importance of vegetable cultivation in India and Andhra Pradesh.
2. Classification and Nutritive value of vegetables.
3. Area and production of vegetables in India and Andhra Pradesh.
4. Export and import potential of vegetables in India. Constraints in vegetable production and remedies to overcome them.

Unit – 2 : Solanaceous and Leafy vegetables **12 Hrs.**

Importance, morphology and taxonomy, varieties, climate and soil, seeds and sowing, manuring, irrigation, intercultural operations, diseases and their control, harvesting and yield of following crops:

Cultivation of (a) Brinjal (b) Tomato (c) *Capsicum* (d) Spinach (e) Coriander and (f) *Mentha*

Unit – 3 : Root and Tuber crops **16 Hrs.**

Importance, morphology and taxonomy, varieties, climate and soil, seeds and sowing, manuring, irrigation, intercultural operations, diseases and their control, harvesting and yield of following crops:

Cultivation of (a) Carrot (b) Beet root (c) Tapioca and (d) *Colocasia*

Unit – 4 : Cole crops **08 Hrs.**

Importance, morphology and taxonomy, varieties, climate and soil, seeds and sowing, manuring, irrigation, intercultural operations, diseases and their control, harvesting and yield of following crops:
Cultivation of (a) Cabbage and (b) Cauliflower

Unit – 5 : Leguminous vegetables **12 Hrs.**

Importance, morphology and taxonomy, varieties, climate and soil, seeds and sowing, manuring, irrigation, intercultural operations, diseases and their control, harvesting and yield of following crops:
Cultivation of (a) Cluster bean (b) Cow pea and (c) *Dolichos*

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II-B.Sc., BHC	**Horticulture-III**	**SEM-II**	**Course code: HORT 3321**	**2022-23**	**No. of Credits:1**	**No. of Hrs /Week:2**

Basics of Vegetable science (Olericulture) Lab

Course outcomes : On successful completion of this course, the students shall be able to:

CO1: Perform various tests for seed germination, viability and vigor.

CO2: Make observations and record data on various growth stages of a given vegetable plant.

CO3: Identify the pathogens and suggest control measures for diseases of vegetable crops.

CO4: Practice suitable irrigation and fertigation methods for various horticulture crops.

1. Demonstration of seed germination test for a vegetable seed.
2. Demonstration of seed viability test.
3. Identification of vegetable seeds and vegetable crops at different growth stages.
4. Preparing vegetable nursery beds.
5. Raising vegetable seedlings in nursery beds and portrays
6. Identification of major diseases and insect pests of vegetables.
7. Land preparation for sowing/ transplanting of vegetable crops.
8. Sowing/ transplanting of vegetables in the main field.
9. Fertilizer application for vegetable growing.
10. Irrigation practices in a vegetable crop field.

SRR & CVR GOVERNMENT DEGREE COLLEGE (A): VIJAYAWADA
II. B.Sc.,HORTICULTURE SEMESTER END EXAMINATION; Course-III
Basics of Vegetable science (Olericulture)

Course Code : HORT 3321 **Max. Marks: 60M**
Time: 3hrs **Pass Marks: 24 M**

MODEL QUESTION PAPER
SECTION-A

Answer any five of the following **5X4=20M**

1. Classification of Vegetables
2. Nutritive values of vegetables
3. Morphology of Capsicum
4. Diseases and their control in Brinjal
5. Explain the taxonomy of Tapioca
6. climate and soil suitable for Beetroot
7. Climate and soil conditions of Cabbage
8. Manure and irrigation in Cauliflower
9. Taxonomy of Dolichos
10 Intercultural operations in cowpea

SECTION – B

ANSWER THE FOLLOWING 5X8-40M

9. a) Describe the Area and production of vegetables in India and Andhra Pradesh.

(OR)

b) Describe the Export and import potential of vegetables in India ,constraints in vegetable production and remedies to overcome them.

10. a) Describe the climate and soil, seeds and sowing, manuring, irrigation, diseases and their control, harvesting and yield in cultivation of Tomato

(OR)

b) Describe the taxonomy, varieties, climate and soil, seeds and sowing, manuring, irrigation, intercultural operations in cultivation of Mentha

11. a) Describe the climate and soil, manuring, irrigation, intercultural operations, diseases and their control, harvesting and yield in cultivation of Carrot

(OR)

b)Describe the Taxonomy , climate and soil seeds and sowing, manuring, irrigation, intercultural operations, harvesting and yield in cultivation of Colocasia .

12. (a) Explain the taxonomy, seeds and sowing, manuring, irrigation, intercultural operations, diseases and their control, harvesting and yield in cultivation of Cabbage

(OR)

b) Explain the climate and soil, sowing, intercultural operations, diseases and their control, harvesting and yield in cultivation of Cauliflower

13. (a) Explain the climate and soil, seeds and sowing, manuring, irrigation, diseases and their control, harvesting and yield in cultivation of cowpea

(OR)

b) Explain the climate and soil, seeds and sowing, manuring, irrigation, intercultural operations, harvesting and yield in cultivation of Dolichos

SRR & CVR GOVERNMENT DEGREE COLLEGE (A): VIJAYAWADA
II. B.Sc., HORTICULTURE EXTERNAL PRACTICAL EXAMINATION; Course-III
Basics of Vegetable science (Olericulture)

Course Code : HORT 3321 **Max. Marks: 25M**
Time: 2hrs **Pass Min: 10 M**

1. Demonstration of seed germination/ viability test (A). **10 M**
2. Demonstration of preparing nursery bed/ cultivation practice for a vegetable crop (B). 10 M
3. Identification of material (C & D -Vegetable plants) and writing scientific name, family and uses. 2 x 4 = **8 M**
4. Identification of a disease on vegetable plant (E) **4 M**
5. Identification and comment on a cultivation practice (F) **4 M**
6. Record + Viva Voice 10 + 4 = **14 M**

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II-B.Sc., BHC	Horticulture-III	SEM-III	Course code:	2022-2023	No. of Credits:4	No. of Hrs /Week:4

Basics of Vegetable science (Olericulture)

QUESTION BANK

UNIT-I

Essays

1. Describe the Importance of vegetable cultivation in India
2. Describe the Export and import potential of vegetables in India ,constraints in vegetable production and remedies to overcome them.
3. Area and production of vegetables in India and Andhra Pradesh.

Short answers

1. Classification of Vegetables
2. Importance of vegetable cultivation in Andhra Pradesh
3. Nutrition values of vegetables
4. Constraints in vegetable production

UNIT-II

Essays

1. Describe the climate and soil, seeds and sowing, manuring, irrigation, diseases and their control, harvesting and yield in cultivation of Tomato
2. Explain the taxonomy, varieties, climate and soil, seeds and sowing, manuring, irrigation, intercultural operations in cultivation of Mentha
3. Describe the morphology and taxonomy, varieties, , irrigation, intercultural operations, harvesting and yield in cultivation of coriander

Short answers

1. Morphology of Capsicum
2. Diseases and their control in Brinjal
3. Taxonomy of Tomato
4. Irrigation methods for spinach

UNIT-III

Essays

1. Describe the climate and soil, manuring, irrigation, intercultural operations, diseases and their control, harvesting and yield in cultivation of Carrot

2. Describe the Taxonomy , climate and soil seeds and sowing, manuring, irrigation,intercultural operations, harvesting and yield in cultivation of Colocasia .

3. Describe the Morphology , Taxonomy , manuring, irrigation, intercultural operations in the cultivation of Beetroot .

Short answers

1. Explain the taxonomy of Tapioca
2. Climate and soil suitable for Beetroot
3. Morphology of carrot
4. Diseases and their control in Colocasia

UNIT-IV

Essays

1. Explain the seeds and sowing, manuring, irrigation, intercultural operations, diseases and their control, harvesting and yield in cultivation of Cabbage

2. Explain the climate and soil, sowing, intercultural operations, diseases and their control, harvesting and yield in cultivation of Cauliflower

3. Explain the Morphology and Taxonomy of Cabbage

Short Answers

1. Climate and soil conditions of Cabbage
2. Manure and irrigation in Cauliflower
3. Seeds and sowing methods in Cauliflower
4. Taxonomy of cauliflower

UNIT-V

Essays

1. Explain the climate and soil, seeds and sowing, manuring, irrigation, diseases and their control, harvesting and yield in cultivation of cowpea
2. Explain the climate and soil, seeds and sowing, manuring, irrigation, intercultural operations, harvesting and yield in cultivation of Dolichos
3. Explain the Morphology and Taxonomy and varieties of Cluster beans

Short Answers

9. Taxonomy of Dolichos
10. Intercultural operations in cowpea
11. Diseases and their control in Dolichos
12. Manuring and irrigation in cluster beans

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An autonomous college in the jurisdiction of Krishna University, Machilipatnam. A.P.

II-B.Sc., BHC	Horticulture-IV	SEM-IV	Course code	2022-23	No. of Credits:4	No. of Hrs /Week:4

Basics of Fruit science (Pomology)

Course Outcomes :

On successful completion of this course, the students will be able to:

CO1: Realize the value of fruits in terms of human nutrition and the economy of a nation.

CO2: Explain the potential fruit zones in various states of our country.

CO3: Classify the fruiting plants based on temperature requirements.

CO4: Acquire knowledge related to various cultivation practices for different fruit crops

CO5: Demonstrate the special intercultural operations done in fruit crops

CO6 : Comprehend the knowledge on varieties of different fruit crops.

CO7: Examine the pests and diseases of fruit crops and develop skills to manage the same,

CO8: Explain about Integrated Orchard Management

CO9: Develop knowledge on various entrepreneurial skills related to fruit science.

Unit – 1 : Introduction to Fruit crops **12 Hrs.**

1. Importance of fruit growing in India and Andhra Pradesh.
2. Nutritive value of fruits.
3. Area and production of India and Andhra Pradesh.
4. Export and import potential of fruits in India. Constraints in fruit production and remedies to overcome them.

Unit – 2 : Tropical Fruit Crops **12 Hrs.**

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield, diseases and pests of the following tropical fruit

crops:Mango (b) Guava and (c) Papaya

Unit – 3 : Sub-tropical and temperate fruit crops 12 Hrs.

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning,manuring and fertilizer application, irrigation, intercropping, harvesting and yield, diseases and pests of the following sub-tropical and temperate fruit crops:

(a) Grapes (b) Pomegranate (c) Citrus and (d) Apple

Unit – 4 : Arid and minor fruit crops 12 Hrs.

Origin, history, distribution, area and production, uses and composition, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, inter cropping, harvesting and yield, diseases and pests of the following arid fruit crops:

(a) Amla (b) Dates and (c) Wood apple

Unit – 5 : Management practices for fruit crops 12 Hrs.

1. Sustainable Production Practices for Local Fruit Production.
2. Integrated Orchard Management/Principles of IPM.
3. Harvesting and Labor Concerns
4. Grading, packing, storage and marketing of fruits.

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II-B.Sc., BHC	Horticulture-IV	SEM-IV	Course code:	2022-23	No. of Credits:1	No. of Hrs /Week:2

Basics of Fruit science (Pomology) Lab

Practical Course Outcomes :

On successful completion of this Practical course , the students shall be able to :

CO1: Identify different varieties of tropical, sub-tropical and temperate fruit crops.

CO2: Estimate and apply required dosage of fertilizer/manure/biofertilizer for a fruit crop.

CO3: Use required PGR to check the leaf fall, flower fall and fruit fall in a crop species.

CO4: Identify pests and diseases of various fruit crops and suggest control measures.

1. Study of varieties of Mango, Papaya and Guava.
2. Study of varieties of Grape, Pomegranate, Citrus and Apple.
3. Study of varieties of Amla, Dates and Wood apple.
4. Manure and fertilizer application including biofertilizers in different fruit crops.
5. Methods of application, calculation of the required quantity of manure and fertilizers based on the nutrient content.
6. Use of growth regulators in fruit crops.
7. Identification and collection of important pests in fruit crops.
8. Identification and collection of important diseases in fruit crops and herbarium preparation.
9. Visit to a local fruit market/commercial orchard.

SRR & CVR GOVERNMENT DEGREE COLLEGE (A): VIJAYAWADA
II. B.Sc.,HORTICULTURE SEMESTER END EXAMINATION; Course-IV
Basics of Fruit science (Pomology)

Course Code : **Max. Marks: 60M**
Time: 3hrs **Pass Min: 24 M**

MODEL QUESTION PAPER
SECTION-A

Answer any five of the following **5X4=20M**

1. Areas of fruit production in Andhra Pradesh
2. Nutritive values of Fruits
3. Intercropping in fruit crops
4. Diseases and their control in Papaya
5. Training and pruning methods in grapes
6. Diseases and pests in Pomegranate
7. Climate and soil requirements of Dates
8. Varieties ,uses and composition of Amla
9. Labor concerns in fruit crops
10 . Short note on Sustainable Production Practices for Local Fruit Production.

SECTION – B

ANSWER THE FOLLOWING **5X8-40M**

9. a) Describe the Area and production of fruits in India

(OR)

b) Describe the Export and import potential of vegetables in India , constraints in fruit production and remedies to overcome them.

10. a) Describe the soil and climatic requirements, training and pruning, manuring and fertilizer application, and diseases and pests of Mango

(OR)

b) Describe the propagation, planting, training and pruning, manuring and fertilizer application, irrigation, harvesting and yield of Guava

11. a) Describe the varieties, climate and soil requirements , training and pruning , manuring, irrigation, diseases and pests in cultivation of Apple

(OR)

b)Describe the climate and soil requirements , training and pruning , fertilizers,, irrigation, harvesting and yield in cultivation of Citrus

12. (a) Describe the climate and soil requirements , training and pruning , manuring, irrigation, diseases and pests in cultivation of Amla

(OR)

b)Describe the climate and soil requirements , training and pruning , fertilizers, irrigation, harvesting and yield in cultivation of Wood apple

13. (a) Explain the Integrated Orchard Management

(OR)

b) Explain the Grading, packing, and marketing of fruits.

SRR & CVR GOVERNMENT DEGREE COLLEGE (A): VIJAYAWADA
II. B.Sc., HORTICULTURE EXTERNAL PRACTICAL EXAMINATION; Course-IV
Basics of Fruit science (Pomology)

Course Code : **Max. Marks: 25M**
Time: 2hrs **Pass Min: 10 M**

1. Describing cultivation practice for a fruit crop. **10 M**
2. Identification with remarks on Mango/ Guava/Papaya variety. **5 M**
3. Identification with remarks Grape/Pomegranate/Citrus/Apple variety. **5 M**
4. Identification with remarks Amla, Dates and Wood apple. **5 M**
5. Identify the disease and pest symptoms and write its causal organism.

   2 x 5 = **10 M**

6. Record + Viva Voice 10 + 5 = **15 M**

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II-B.Sc., BHC	Horticulture-IV	SEM-IV	Course code:	2022-2023	No. of Credits:4	No. of Hrs /Week:4

Basics of Fruit science (Pomology)

QUESTION BANK

UNIT-I

Essays

1. Describe the Area and production of fruits in India
2. Describe the Export and import potential of vegetables in India ,constraints in fruit production and remedies to overcome them.
3. Importance of fruit growing in India and Andhra Pradesh.

Short answers

1. Areas of fruit production in Andhra Pradesh
2. Nutritive values of Fruits
3. Constraints in fruits production
4. Remedies to overcome the problems in fruit production

UNIT-II

Essays

1. Describe the soil and climatic requirements, training and pruning, manuring and fertilizer application, and diseases and pests of Mango
2. Describe the propagation, planting, training and pruning, manuring and fertilizer application, irrigation, harvesting and yield of Guava
3. Describe the soil and climatic requirements, training and pruning, manuring and fertilizer application, and diseases and pests of Papaya

Short answers

1. Intercropping in fruit crops
2. Diseases and their control in Papaya
3. Varieties and composition in Mango
4. Area and production in papaya

UNIT-III

Essays

1. Describe the varieties, climate and soil requirements , training and pruning , manuring, irrigation, diseases and pests in cultivation of Apple
2. Describe the climate and soil requirements , training and pruning , fertilizers,, irrigation, harvesting and yield in cultivation of Citrus
3. Describe the soil and climatic requirements, training and pruning, manuring and fertilizer application, and diseases and pests of Grapes

Short answers

1. Training and pruning methods in grapes
2. . Diseases and pests in Pomegranate
3. Propagation and planting methods of apple
4. Diseases and pests in Citrus

UNIT-IV

Essays

1. Describe the climate and soil requirements , training and pruning , manuring, diseases and pests in cultivation of Amla
2. Describe the climate and soil requirements , training and pruning , fertilizers, irrigation, harvesting and yield in cultivation of Wood apple
3. Describe the training and pruning , fertilizers, irrigation, harvesting and yield in cultivation of Dates

Short Answers

1.. Climate and soil requirements of Dates
2. Varieties ,uses and composition of Amla
3. origin and distribution of Wood apple
4. Irrigation practices in arid fruit crops

UNIT-V

Essays

1. Explain the Integrated Orchard Management
2. Explain the Grading, packing, storage and marketing of fruits.
3. Sustainable Production Practices for Local Fruit Production.

Short Answers

1. Labor concerns in fruit crops
2. Harvesting methods
3. Principles of IPM
4. Storage of fruits

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II-B.Sc., BHC	Horticulture-V	SEM-IV	Course code	2022-23	No. of Credits:4	No. of Hrs /Week:4

Floriculture

Course Outcomes :

On successful completion of this course, the students will be able to:

CO1: Realize the value of flowers in terms of the economy of a nation.

CO2: Acquire knowledge related to various cultivation practices for different flower crops

CO5: Demonstrate the special intercultural operations done in flower crops

CO6 : Comprehend the knowledge on varieties of different flower crops.

CO7: Examine the pests and diseases of flower crops and develop skills to manage the same

CO6: Gain knowledge on post harvest management of important commercial flower crops

CO7: Acquire practical knowledge on dry flower technology

Unit – 1 : Introduction to Floriculture **12 Hrs.**

1. Scope and Importance of floriculture in India
2. Area, production and exports of flowering plants
3. Classification of ornamental plants
4. Present status and Future prospects and strategies needed for improvement

Unit – 2 : Production technology of cut flowers **12 Hrs.**

Origin, area and production, uses, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield, diseases and pests of

a) Rose b) Gerbera (c) Carnation and (d) tuberose

Unit – 3 : Production technology of loose flowers **12 Hrs.**

Origin, area and production, uses, varieties, soil and climatic requirements, propagation, planting, training and pruning, manuring and fertilizer application, irrigation, intercropping, harvesting and yield, diseases and pests of
a) Marigold b) Chrysanthemum (c) Jasmine and (d) Crossandra

Unit – 4 : Post harvest technology of cut flowers **12 Hrs.**

1. Causes for deterioration of quality in cut flowers
2. Factors affecting cut flower longevity
3. Handling,Harvest stage,Grading and Bunching
4. Packaging,Pre-cooling,Storage and Floral preservatives

Unit – 5 : Dry flower technology **12 Hrs.**

1. Advantages and uses of dry flowers
2. Factors affecting dehydration
3. Drying methods: Air drying, Embedded drying, Sun drying ,vacuum drying , microwave drying , Freeze drying

Suggested co-curricular activities for Horticulture Core Course - 5

Measurable :

Student seminars:

- Area, production and exports of flowering plants
- Production technology of cut flowers
- Production technology of loose flowers
- Commercial market of major cut and loose flowers
- Special intercultural operations in floral crops
- Methods of irrigation of floral crops.
- Methods of fertilizer application of floral crops.
- Post harvesting technology of flowering crops
- Dry flowering crops

Student Study Projects:

1.A report on flower crops in a locality.

2. Collection and preparation of herbarium of flower crops in their area.

3.A report on various inter-culture practices for a flower crop.

4.Study report on commercial importance of cut flowers

5. Study report on commercial importance of Loose flowers

6.Study report on commercial importance of Dry flowers

7.Study report on diseases of flower crops in a locality.

8. A report on use of fertilizers, pesticides, herbicides for local flower crops

9. A report on harvest to marketing for a flower crop.

10. Report on economics of a flower crop in their locality.

11. A study report on different methods of irrigation of flower crops in a locality.

Assignments: Written assignment at home / during '0' hour at college; preparation of charts with drawings, making models etc., on topics included in syllabus.

General :

1. Group Discussion (GD)/ Quiz/ Just A Minute (JAM) on different modules in the syllabus of the course.
2. Visit to Horticulture University/ Research Station/ Nursery

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II-B.Sc., BHC	Horticulture-IV	SEM-IV	Course code:	2022-23	No. of Credits:1	No. of Hrs /Week:2

Floriculture Lab

Practical Course Outcomes :

On successful completion of this Practical course , the students shall be able to :

On successful completion of this Practical course , the students shall be able to :

CO1: Identify different varieties of cut flowers and loose flowers .

CO2: Gain knowledge on production technology of important cut flowers and loose flowers

CO3: Identify pests and diseases of various floral crops and suggest control measures.

CO4: Learn about post harvest handling of cut flowers

CO5: Prepare different dry flower products

1. Identification and study of varieties of Rose, Gerbera, Carnation and Tuberose
2. Identification and study of varieties of Marigold, Chrysanthemum, Jasmine and Crossandra
3. Propagation of Rose by cutting and budding
4. Visit to Commercial flower growing areas
5. Study of plant growth regulators in flower crops.
6. Identification and collection of important pests in flower crops.
7. Identification and collection of important diseases in flower crops and herbarium preparation.
8. Use of floral preservatives and other compounds for prolonging vase life of cut flowers
9. Preparation of different dry flowers and products

SRR & CVR GOVERNMENT DEGREE COLLEGE (A): VIJAYAWADA
II. B.Sc.,HORTICULTURE SEMESTER END EXAMINATION; Course-IV
Floriculture

Course Code :
Time: 3hrs

Max. Marks: 60M
Pass Min: 24 M

MODEL QUESTION PAPER
SECTION-A

Answer any five of the following 5X4=20M

1. Importance of floriculture in India
2. Strategies needed for improvement of floriculture in India
3. Area and production of tuberose
4. Varieties , soil and climate of Carnation
5. Climate and Plant Propagation for chrysanthemum
6. Manuring and fertilizer application in Crossandra
7. Floral preservatives
8. Bunching
9. Freeze Drying
10. Dehydration of flowers

SECTION – B
ANSWER THE FOLLOWING 5X8-40M

11.. a) Describe the Present status and future prospects of floriculture in India
(OR)
b) Describe the Classification of ornamental plants

12 a)) Discuss the cultivation practices of Rose
(OR)
b) Describe the Soil and climate, Diseases and pests of Gerbera

13. a) Describe the cultivation practices of Marigold
(OR)
b) Discuss the cultivation practices of Jasmine

14. (a)Describe the causes for deterioration of quality in cut flowers
(OR)
(b)Discuss the Packaging,Pre-cooling,Storage of cut flowers

15. (a) Explain the various drying methods
(OR)
b) Explain the Advantages and uses of dry flowers

SRR & CVR GOVERNMENT DEGREE COLLEGE (A): VIJAYAWADA
II. B.Sc., HORTICULTURE EXTERNAL PRACTICAL EXAMINATION; Course-IV
Floriculture

Course Code :
Time: 2hrs

Max. Marks: 25M
Pass Min: 10 M

1. Identification with remarks on Rose/ Gerbera /Carnation / tuberose variety. **3 M**
2. Identification with remarks Marigold /Chrysanthemum /Jasmine/ Crossandra variety. **3 M**
3. Role of Auxins/Gibberellins/Cytokinins/Ethylene on flowering crops **3 M**
4. Identify the disease and pest symptoms and write its causal organism.

   2 x 3 = **6 M**

6. Record + Herbarium + Viva Voice 5+ 3 + 2= **10 M**

Note: Record and Herbarium Submission Compulsory