

R. E. Society's
**R. P. Gogate College of Arts & Science and
R. V. Jogalekar College of Commerce
(Autonomous), Ratnagiri**



**Department of Botany
UG Programme 2024-25
Syllabus for S. Y. B. Sc. SEC(Botany)
Semester III and IV
Under Choice Based Credit System (CBCS)**

**R. P. Gogate College of Arts and Science and R. V. Jogalekar College of Commerce
(Autonomous), Ratnagiri
Board of Studies in Botany
Syllabus for S. Y. B. Sc. Botany SEC effective from the year 2024-25**

**R. P. Gogate College of Arts & Science and
R. V. Jogalekar College of Commerce (Autonomous), Ratnagiri
Board of Studies in Botany
Academic Year 2024-25**

Nomenclature of the Course	SEC-Propagation of Horticultural Plants -II
Class	S.Y.B.Sc.
Semester	03
Course Code	USBOTSEC2
No. of Credits	02
Nature	Practical
Type	SEC

Course Outcomes:

Students will be able to:

- CO1:** Gain the knowledge about various propagation techniques for horticultural plants.
CO2: Able to propagate the vegetable,spices and medicinal plants by different propagation techniques.
CO3: Learn and perform the stem, root and leaf cutting techniques for propagation of plants.
CO4: Learn and perform various techniques for propagation of plants like layering, grafting, budding.
CO5: Learn and perform different methods of developing new plant varieties.
CO6: To maintain nursery plants.

Syllabus:

Unit No.	Unit Title	Sub titles (Learning Points)
1.	Plant Propagation Techniques in Horticultural plants - II	Layering : Simple , Compound, Air layering Grafting : Definition, advantages and disadvantages. Types: Splice,Whip/Tongue Budding : Definition, advantages and disadvantages. Types: Tbudding, Shield Maintenance of nursery plants Developing new varieties - Emasculation, Bagging Cutting : Root cutting, Stem cuttings, and leaf cuttings
Practical		
1.	Plant Propagation Techniques in Horticultural plants - II	To observe different types of pots and potting medium (Clay, Cement, Porcelain, Plastic, Special type of pots) To study Potting and repotting of plants. Plant propagation by Stem cutting : <i>Hibiscus</i> , Rose Plant propagation by Root cutting : - <i>Aegle marmelos</i> Plant propagation by Leaf cutting : - <i>Aloe vera</i> , <i>Bryophyllum</i>

**R. P. Gogate College of Arts and Science and R. V. Jogalekar College of Commerce
(Autonomous), Ratnagiri
Board of Studies in Botany
Syllabus for S. Y. B. Sc. Botany SEC effective from the year 2024-25**

		Plant propagation by Simple layering: <i>Piper longum</i> , <i>Piper nigrum</i>
		Plant propagation by Compound layering: <i>Pothos</i> , <i>Piper nigrum</i>
		Plant propagation by Air layering: <i>Cinnamomum zeylanicum</i>
		Propagation practices by budding- T budding, Shield.
		Propagation practices by grafting - Spliced, Whip grafting.
		Developing new plant varieties by - emasculation technique -bagging technique
		Maintenance of nursery plants.

Prescribed Text/s (If any):

- Basic Horticulture - Jitendra singh , Kalyani publication,2008.
- Propagation practices - M K Sadhu,New age international,1989.
- Indoor gardening - S C Dey,Agrobios (india),2003.
- Plant propagation and nursery management -Dr. Arun kumar singh,Arun kumar,S K Kataria and Sons Publication,2023.
- Instant Horticulture- S N Gupta,Jain Brothers,2023.
- Basics of horticulture - K.V.Peter,New India Publishing Agency (NIPA),2021

Other Learning Resources recommended:

Evaluation Pattern

A) Continuous Internal Evaluation: Maximum Marks: 20 marks

Method	Marks
Active class participation	05 marks
Journal	05 marks
Class test	10 marks

**R. P. Gogate College of Arts and Science and R. V. Jogalekar College of Commerce
(Autonomous), Ratnagiri
Board of Studies in Botany
Syllabus for S. Y. B. Sc. Botany SEC effective from the year 2024-25**

B) Semester End Examination: Maximum Marks: 30 marks

Question No. and Sub questions (If any)	Unit and sub unit (with number and title)	Type of Question (Essay / short note / Objective / Diagram, etc.)	Marks
Q. 1	Plant Propagation Techniques	Propagation technique	10 marks
Q. 2.	Plant Propagation Techniques	Potting/Repotting	10 marks
Q. 3.	Plant Propagation Techniques	Identify and describe	10 marks

**S.Y.B.Sc.
(Skill Enhancement course)**

Duration- 2 hrs

Maximum marks 30

Note- Show all the preparations to the examiner.

- Q.1 Demonstrate the propagation techniques ----- and ----- using specimen A and B. 10
- Q.2 Demonstrate the technique of potting/repotting for the given plant specimen C and D. 10
- Q.3 Identify the plant part and describe the propagation technique to be followed for specimen E, F, G, H and I. 10

Keys:-

A and B - Cutting- stem, leaf cutting

Layering- air layering

Grafting - Spliced/Whip

Budding- T budding

C and D- Any two plants from the prescribed syllabus.

E, F, G, H and I

The plants other than those kept in Q.1 and 2.

**R. P. Gogate College of Arts and Science and R. V. Jogalekar College of Commerce
(Autonomous), Ratnagiri
Board of Studies in Botany
Syllabus for S. Y. B. Sc. Botany SEC effective from the year 2024-25**

Nomenclature of the Course	SEC-Propagation of Horticultural Plants -III
Class	S.Y.B.Sc.
Semester	04
Course Code	USBOTSEC3
No. of Credits	02
Nature	Practical
Type	SEC

Course Outcomes:

Students will be able to:

CO1: Gain the knowledge about various propagation techniques for horticultural plants.

CO2: Able to propagate the vegetable,spices and medicinal plants by different propagation techniques.

CO3: Learn and perform the stem, root and leaf cutting techniques for propagation of plants.

CO4: Learn and perform different layering and grafting techniques for propagation of plants.

CO5: Learn and perform advanced techniques for nursery management like hydroponics, space garden, vertical farming and soil-less farming.

Syllabus:

Unit No.	Unit Title	Sub titles (Learning Points)
1.	Plant Propagation Techniques in Horticultural plants - III	Preparation of beds Propagation by seeds - Vegetables, Fruits, etc. Layering : Tip, Trench, Mound layering Grafting : Side, veneer, bark, epicotyls, approach, repair grafting – enarching, bridge and bracing Advanced Techniques in Horticulture - - <ul style="list-style-type: none"> ● Hydroponics ● Space garden ● Vertical farming ● Soil-less farming
Practical		
1.	Plant Propagation Techniques in Horticultural plants - III	Preparation of beds
		Propagation practices by grafting - Side, veneer
		Propagation practices by grafting - bark, epicotyls
		Propagation practices by grafting - approach, repair grafting – enarching
		Propagation practices by grafting - repair grafting – bridge and bracing

**R. P. Gogate College of Arts and Science and R. V. Jogalekar College of Commerce
(Autonomous), Ratnagiri
Board of Studies in Botany
Syllabus for S. Y. B. Sc. Botany SEC effective from the year 2024-25**

	Plant propagation by Tip layering.
	Plant propagation by Trench layering.
	Plant propagation by Mound layering.
	Propagation by seeds - Vegetables, Fruits, etc.
	Advanced technique in Horticulture - hydroponics.
	Advanced technique in Horticulture - soil-less cultures.
	Advanced technique in Horticulture - space garden.
	Advanced technique in Horticulture - vertical garden.

Prescribed Text/s (If any):

- Basic Horticulture - Jitendra singh , Kalyani publication,2008.
- Propagation practices - M K Sadhu,New age international,1989.
- Indoor gardening - S C Dey,Agrobios (india),2003.
- Plant propagation and nursery management -Dr. Arun kumar singh,Arun kumar,S K Kataria and Sons Publication,2023.
- Instant Horticulture- S N Gupta,Jain Brothers,2023.
- Basics of horticulture - K.V.Peter,New India Publishing Agency (NIPA),2021

Other Learning Resources recommended:

Evaluation Pattern

C) Continuous Internal Evaluation: Maximum Marks: 20 marks

Method	Marks
Active class participation	05 marks
Journal	05 marks
Class test	10 marks

**R. P. Gogate College of Arts and Science and R. V. Jogalekar College of Commerce
(Autonomous), Ratnagiri
Board of Studies in Botany
Syllabus for S. Y. B. Sc. Botany SEC effective from the year 2024-25**

D) Semester End Examination: Maximum Marks: 30 marks

Question No. and Sub questions (If any) (E.g. Q. 1 a) ...	Unit and sub unit (with number and title)	Type of Question (Essay / short note / Objective / Diagram, etc.)	Marks
Q. 1	Plant Propagation Techniques in Horticultural plants - III	Propagation technique	10 marks
Q. 2.		Preparation of bed/pot	10 marks
Q. 3.		Identify and describe	10 marks

**S.Y.B.Sc.
(Skill Enhancement course)**

Duration- 2 hrs

Maximum marks 30

Note- Show all the preparations to the examiner.

- Q.1 Demonstrate the propagation techniques ----- and ----- using specimen A and B. 10
- Q.2 Demonstrate the technique of preparation of bed / pot for the given plant specimen C and D. 10
- Q.3 Identify the plant part and describe the propagation technique to be followed for specimen E, F, G, H and I. 10

Keys:-

A and B- Layering- Tip/Trench/Mound layering

Grafting - Side, veneer, bark, epicotyls, approach, repair grafting – enarching, bridge and bracing

C and D- Any two plants from the prescribed syllabus.

E, F, G, H and I

The plants other than those kept in Q.1 and 2.

**R. P. Gogate College of Arts and Science and R. V. Jogalekar College of Commerce
(Autonomous), Ratnagiri
Board of Studies in Botany
Syllabus for S. Y. B. Sc. Botany SEC effective from the year 2024-25**

**R. P. Gogate College of Arts and Science and R. V. Jogalekar College of Commerce
(Autonomous), Ratnagiri
Board of Studies in Botany
Syllabus for S. Y. B. Sc. Botany effective from the year 2024-25**

**S.Y.B.Sc.
(Skill Enhancement course)**

Duration- 2 hrs

Maximum marks 30

Note- Show all the preparations to the examiner.

- | | | |
|-----|--|----|
| Q.1 | Demonstrate the propagation techniques ----- and ----- using specimen A and B. | 10 |
| Q.2 | Demonstrate the technique of preparation of bed / pot for the given plant specimen C and D. | 10 |
| Q.3 | Identify the plant part and describe the propagation technique to be followed for specimen E, F, G, H and I. | 10 |

Keys:-

A and B- Layering- Tip/Trench/Mound layering

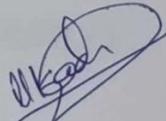
Grafting - Side, veneer, bark, epicotyls, approach, repair grafting – enarching, bridge and bracing

C and D- Any two plants from the prescribed syllabus.

E, F, G, H and I

The plants other than those kept in Q.1 and 2.

Date: 16/04/24
Place: Ratnagiri


Signature

Chairperson and HoD