

**SUBJECT: Propagation and Nursery Management Programmer (PNMP)****CLASS XII****SEMESTER III****THEORY****FULL MARKS: 30****[MCQ Type (1 Mark) Question]**

<b>UNIT</b>	<b>Topic</b>	<b>No. of periods assigned</b>	<b>Marks</b>
1	Nursery	5	4
2	Establishment of nursery	10	6
3	Preparation of beds, pots and growing media	10	6
4	Management of nursery	10	6
5	Potting and repotting	4	3
6	Nursery registration and entrepreneurship	6	5
	<b>Total</b>	<b>45</b>	<b>30</b>

**DETAILED SYLLABUS**

<b>UNIT</b>	<b>Topic / Sub Topic</b>	<b>No. of periods assigned</b>
1	<b>Nursery:</b> Importance of nursery in Horticulture; Types of Nurseries	5
2	<b>Establishment of Nursery:</b> Important factors of nursery; Layout of nursery; Components of nursery; Different propagation structures	10
3	<b>Preparation of beds, pots and growing media:</b> Nursery beds preparation; Seedling production of vegetable; Seedling production of ornamental crops; Preparation of pot and growing media	10
4	<b>Management of Nursery:</b> Management of young nursery plants; Irrigation Management; Nutrition Management; Weeds Management; Plant protection	10
5	<b>Potting and repotting:</b> Potting of nursery plants; Repotting of nursery plants	4
6	<b>Nursery registration and entrepreneurship:</b> Needs for Registration of Nursery; Needs for accreditation of Nursery; Needs for certification of Nursery; Requirements for Nursery registration	6
	<b>Total</b>	<b>45</b>

**Propagation and Nursery Management Programmer (PNMP)**  
**CLASS XII**

**SEMESTER IV**

**THEORY**

**FULL MARKS: 30**

**[SAQ (2 Marks) and LAQ Type (4 Marks) Question]**

UNIT	Topic	No. of periods assigned	Marks
1	Basic propagation	10	6
2	Seed dormancy	10	4
3	Specialized vegetative structures and methods of vegetative propagation	20	10
4	Progeny and rootstock	7	2
5	Growth regulat in plant propagation	8	4
6	Micro propagation (tissue culture)	8	4
	<b>Total</b>	<b>63</b>	<b>30</b>

**DETAILED SYLLABUS**

UNIT	Topic / Sub Topic	No. of periods assigned
1	<b>Basic Propagation:</b> Needs of propagation,sexual method of propagation,asexual method of propagation,advantages and disadvantages	10
2	<b>Seed dormancy:</b> Types of seed dormancy,causes of seed dormancy (internal and external),methods of breaking seed dormancy	10
3	<b>Specialized vegetative structures and methods of vegetative propagation:</b> Propagation byspecialized vegetative structures - bulb, corm, rhizome, tuber, tuberous root, sucker, off-sets;Different types and methods of vegetative propagation - cutting, layering, grafting and budding	20
4	<b>Progeny and rootstock:</b> Growing and maintenance of progeny plants; Raising of rootstock	7
5	<b>Growth regulators in plant propagation:</b> Definition of growth regulators,types of growth regulators,use of growth regulators in plant propagation	8
6	<b>Micro propagation (tissue culture):</b> Definition of micro propagation (tissue culture),advantages and disadvantages,various culture techniques of micro propagation	8
	<b>Total</b>	<b>63</b>

**PRACTICAL AND PROJECT**

**CLASS XII**

**FULL MARKS: 50 (Practical) + 20 (Project)**

**NO. OF PERIODS ASSIGNED: 144 (120 for Practical+24 for Project)**

**DETAILED SYLLABUS**

<b>Sl. No.</b>	<b>Topic</b>	<b>No. of periods</b>
<b>SEMESTER III</b>		
1	Site selection for nursery, leveling nursery area, selection of plots, layout of a commercial nursery	4
2	Identification of nursery tools and implements, use tools and implements during nursery operations	4
3	Demonstration of preparation of land, drainage channel, demarcation of plots, erection of fencing	8
4	Demonstration of preparation of nursery beds – raised bed, sunken bed, level beds; Preparation of germination bed, transplant bed, storage bed, seedling bed and cutting bed; raising and transplanting of seedlings	14
5	Demonstration of nutrient management, water management, weed management and plant protection in nursery plants	12
6	Preparation of growth regulators; Use of growth regulators for seed germination; Use of growth regulators in cutting and layering	6
7	Identification of different sizes of pots and growing media; preparation and maintenance of pots for nursery operations, repotting of plants	6
8	Study of lifting, labeling and packing of nursery plants	6
<b>Total</b>		<b>60</b>
<b>SEMESTER IV</b>		
19	Methods and techniques of vegetative propagation through different types of cuttings	4
20	Methods and techniques of vegetative propagation through different types of layering	4
21	Selection of mother plant and scion shoots; Selection of rootstock plant; Raising of rootstock plant; raising of progeny /mother plants	6
22	Methods and techniques of vegetative propagation through different types of grafting	8
23	Methods and techniques of vegetative propagation through different types of budding	8
24	Propagation of plants through bulb, corm, rhizome, sucker, tuber, tuberous root, off-sets	10
25	Develop an idea on mist chamber and poly house; Study the cost of establishment of mist chamber and poly house	10
26	Study of different components of commercial nursery; Acquaintance with different nursery management practices; Steps of nursery development; Develop an idea on nursery	12
<b>Total</b>		<b>60</b>
<b>PROJECT</b>		<b>24</b>
<b>Total</b>		<b>84</b>
<b>Class XII Total</b>		<b>144</b>

**PROJECT (20 marks: Two Projects, 10 marks each)**

<b>Sl. No.</b>	<b>Project</b>	<b>Details</b>	<b>Marks</b>
1	Project I (12 periods)	Preparation of a Model Horticultural Nursery with different components	10
2	Project II (12 periods)	Establishment of Model Nursery for fast multiplication of elite clones and varieties of fruit Crops (mango, guava, litchi and ber)	10
3	Project III (12 periods)	Establishment of Model Nursery for fast multiplication of foliage plants	10
4	Project IV (12 periods)	Establishment of Model Nursery for fast multiplication of flower plants	10

Note: The school may develop other Projects as per their needs, choices or available resources.