II SEMESTER

PAPER-2:- MULBERRY CULTIVATION AND SILKWORM REARING **3 hrs/week X 15 = 48 hrs.**

Part –A: Mulberry cultivation.

Unit- 1

1. Definition of soil, different types of soils in india — 1 Hrs.
2. Importance of soils with reference to mulberry cultivation; soil analysis- soil sampling, soil pH, organic carbon and NPK level. — 2 Hrs.
3. Propagation of mulberry- seedling, sapling , grafting and layering. — 2 Hrs
4. Raising of commercial nursery. — 1 Hrs
5. Application of root inducing hormones. — 1 Hrs

Unit –2

6. Establishment of mulberry garden under rain-fed and irrigated conditions:
   (a) Planting season.
   (b) Selection and preparation of land.
   (c) Planting systems
   (d) Selection and preparation of planting material
   (e) Manuring, intercultivation and irrigation.
   (f) Initial harvesting.
   (g) Chawki garden; importance and maintenance. — 6 Hrs.

7. Manures and fertilizers: Types, dosage, application and schedule; biofertilizers and foliar nutrition; micro nutrients; composting and vermicomposting. — 3 Hrs.
8. Intercultivation practices: Purpose, methods, time and frequency; mulching; Weeding. — 1 Hrs.

Unit-3

9. Irrigation: Importance, Source, methods, periodicity and quantity of irrigation, over-irrigation and its effects. — 2 Hrs.
10. Leaf harvesting: harvesting methods (leaf and shoot harvests); transportation and preservation of harvested leaf. — 2 Hrs.
11. Estimation of leaf yield in rainfed and irrigated conditions: Importance of leaf quality — 1 Hrs.
12. Integrated weed management — 2 Hrs.

Part-B: Silkworm rearing.

Unit -4

13. Rearing house: Location, orientation, plan and utilities; model rearing house; low-cost rearing house. — 2 Hrs.
14. Rearing appliances-shelf and shoot rearing; requirements of rearing appliances (per unit rearing of 100dfls). — 2 Hrs.
15. Disinfection of rearing house and rearing appliances; disinfectants (formalin, bleaching powder, chlorine dioxide, slaked lime and iodine compounds); rearing and personal hygiene. — 2 Hrs.

Unit-5

16. Selection of silkworm races/breeds for rearing- advantages and disadvantages of bivoltine and multivoltine pure races/ breeds and hybrids. — 2 Hrs.
17. Incubation- definition, requirement of environmental conditions, incubation devices; identification of stages of development; black boxing and its importance. — 2 Hrs.
18. Chawki rearing: Preparation; brushing and its methods; types of chawki rearing – traditional and improved method; optimum environmental conditions; methods and frequency of feeding; methods of bed cleaning; spacing; moulting and care during moult. — 5Hrs.

Unit -6

19. Late age silkworm rearing: Methods; optimum environmental conditions; feeding quantity and frequency; methods of bed cleaning; spacing; moulting and care during moult. — 4 Hrs.
20. Identification of spinning larva; spinning; mounting and mounting density; types of mountages, their advantages and disadvantages; environmental requirements during spinning. — 2 Hrs.
21. Harvesting: Time of harvesting; sorting, storage/ preservation, packaging and transport of cocoons; leaf-cocoon ratio; maintenance of rearing records. — 3Hrs.

PRACTICAL -2: MULBERRY CULTIVATION AND SILKWORM REARING. 15 Practicals -3 hrs each

Mulberry cultivation;

1. Determination of soil pH and water holding capacity. 2 Pract.
2. Farm implements. 1 Pract.
3. Preparation of land, pits and rows; preparation of rooting media (fieldwork). 1 Pract.
4. Raising of sapling and seedling (field work). 1 Pract.
5. Intercultivation, mulching, irrigation, pruning and estimation of leaf yield. (demonstration and exercise). 1 Pract.
6. Grafting and Layering in mulberry. 1 Pract.
7. Harvesting and preservation techniques; leaf selection for different instars. 1 Pract

Silkworm rearing;

8. Rearing houses- model rearing house and low-cost rearing house. 1 Pract.
9. Rearing appliances. 1 Pract.

10. Disinfection- Types of disinfectants- concentration and dosage requirement; preparation of spray formulation of disinfectants. 1 Pract.
11. Incubation of silkworm eggs- Methods; black boxing; maintenance of temperature and humidity; 1 Pract.
12. Brushing: Methods; chawki rearing; use of paraffin paper and blue polythene sheet. Bed cleaning: use of bed cleaning net and disposal of bed refuses and silkworm litter. 1 Pract.
13. Moulting: Identification of moulting larva, care during moulting; mounting and mounting density; harvesting of cocoons; assessment of cocoons; types of mountages; Maintenance of records for silkworm rearing. 2 Pract.