**SEMESTER-5**

 **(Silkworm Seed Management)**

 **DSE-SR-16-502**

 **(Credits: Theory -04, Practical-02)**

**Unit- I: Introduction**

1. Seed organization: Parental stock maintenance and multiplication. Types of seeds.
2. Silkworm Seed areas: Norms for seed areas and selected seed cocoon growers.
3. National Silkworm Seed Project and Seed Legislation Act.
4. Seed cocoon markets and norms for marketing.

**Unit-II: Seed Production Management**

1. Grainages: Introduction to grainages and their types
2. Plan of model grainages: Infrastructure, cold storage and facility
3. Grainage equipments.
4. Distribution of eggs: precautions and preventive measures

**Unit-III: Grainage Operations-I**

1. Selection of seed cocoons. Processes for selection of seed cocoons
2. Sex separation: Definition and methods
3. Eclosion of moths: Synchronization of emergence of moth, collection and selection, coupling, decoupling and storage of male moth.
4. Oviposition: Methods –sheet egg and loose egg preparation.

**Unit-IV: Grainage Operations-II**

1. Mother moth examination: Types and precautions during moth examination
2. Acid treatment of bivoltine eggs: Hot and cold acid treatments, advantages and disadvantages
3. Acid treatment after chilling and Hibernation schedules
4. Embryonic development: Study of various sages during embryonic development.

**PRACTICALS**

a) Study of grainage equipments

b) Deflossing, cocoon sorting.

c) Sex separation by pupal method.

d) Emergence of moths—Selection of moths—pairing and depairing. Oviposition, preservation of male moths.

e) Pupal gut examination and Mother moth examination—Individual and mass, whole and sampling method, and surface sterilization of silkworm eggs.

f) Sheet eggs and loose egg preparation process.

g) Acid treatment of bivoltine eggs. Hot acid treatment and cold acid treatments.

h) Dissection of silkworm eggs of different stages—staining method.

i) Visit to the commercial grainage, cocoon markets and reeling units of various state and centre Govt.