

2020

**SERICULTURE**

**Paper: Course-09 (Gr. A & B)**

**(Mulberry Breeding, Development, Reproduction,  
Genetics & Tissue Culture in Mulberry)**

Full Marks : 60 Time : 2½ Hours

*The figures in the right-hand margin indicate marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

**GROUP-A**

**(Marks: 30)**

**(Mulberry Breeding)**

1. Answer any **five** questions:  $1 \times 5 = 5$
- What is mass selection?
  - What do you mean by clonal selection?
  - What is Amphidiploidy?
  - Explain the term Genotype.
  - What do you understand by mutagen?
  - Indicate the diploid chromosome number of mulberry.

[Turn Over]

- g) What is air layering?
2. Answer any **three** of the following :  $5 \times 3 = 15$
- Indicate in brief about different hybridization techniques for mulberry breeding.
  - Differentiate between Test cross and Back cross.
  - What are GCA and SCA? How heritability is estimated in progenies?
  - What are the economic traits considered for mulberry selection? What do you mean by hybrid vigour?
  - Discuss the sexuality of mulberry. Explain the role of emasculation in mulberry breeding.
3. Answer any **one** of the following :  $10 \times 1 = 10$
- Enumerate the pure line, clonal and mass selection in mulberry breeding. Write down the importance of disease and pest resistance breeding in mulberry.
  - Write short notes on (any **two**):  
(i) Inbreeding depression (ii) OPH and depression (iii) AICEM

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**GROUP-B**

**(Marks: 30)**

**(Development, Reproductions, Genetics  
and Tissue Culture in Mulberry)**

4. Answer any **five** questions:  $1 \times 5 = 5$
- a) What do you mean by development of mulberry?
  - b) Indicate the type mulberry fruit.
  - c) What do you mean by culture media?
  - d) What is haploid induction?
  - e) What do you understand Megasporogenesis?
  - f) Indicate the controlled pollination.
  - g) What is micro sporogenesis?
5. Answer any **three** of the following :  $5 \times 3 = 15$
- a) Discuss the importance of anatomy of mulberry leaf in parent selection.
  - b) Describe the structure of ovule of mulberry with a neat sketch.
  - c) Write down a brief note on the cytological techniques.

- d) What is somatic hybridization? How it is applied for development of hybrids of mulberry?
- e) Tissue culture of mulberry can address the quick propagation of new mulberry varieties—discuss the advantages.

6. Answer any **one** of the following :  $10 \times 1 = 10$
- a) What is genetic variability? How it is sourced? How genetic variability is exploited in breeding process of mulberry?
  - b) Write short notes on (any **two**) :
    - i) Karyotype studies
    - ii) Encapsulation of shoot buds
    - iii) Cryopreservation

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**Date of Examination:**

**16.7.2021, Time: 12:00 Noon – 02:30 PM**