

Roll No :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

SP-656

M.Sc. (Final) Examination, 2021

BOTANY

Paper - VI

**(Molecular Biology, Genetics, Biotechnology,
Plant Breeding and Biometry)**

Time : 1½ Hours]

[Maximum Marks : 75

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

(खण्ड-अ)

(अंक : 2 × 10 = 20)

नोट :- सभी दस प्रश्नों के उत्तर दीजिए (उत्तर-सीमा **50** शब्द)। प्रत्येक प्रश्न **2** अंक का है।

Section-B

(Marks : 5 × 5 = 25)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

(खण्ड-ब)

(अंक : 5 × 5 = 25)

नोट :- सभी पाँच प्रश्नों के उत्तर दीजिए। प्रत्येक प्रश्न में विकल्प का चयन कीजिए (उत्तर-सीमा **200** शब्द)। प्रत्येक प्रश्न **5** अंक का है।

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

(खण्ड-स)

(अंक : 10 × 3 = 30)

नोट :- पाँच में से किन्हीं **तीन** प्रश्नों के उत्तर दीजिए (उत्तर-सीमा **500** शब्द)। प्रत्येक प्रश्न **10** अंक का है।

BI-297

(1)

SP-656 P.T.O.

Section–A

Answer all questions. Answer should not exceed **50** words in each question.

1. What do you understand by the following ?
 - (i) Okazaki Fragments
 - (ii) Attenuation
 - (iii) Sources of Genetic Variation
 - (iv) Operon Concept
 - (v) Role of vectors in Recombinant DNA Technology
 - (vi) Transgenic Plants
 - (vii) Plant Quarantine
 - (viii) Methods of Plant Breeding
 - (ix) Probability Distribution
 - (x) Standard Deviation

Section–B

5 each

Attempt all questions. Answer should not exceed **200** words in each question.

2. Give a brief account of Meselson–Stahl experiment supporting semi-conservative replication.

Or

Explain different forms of DNA.

3. Elaborate the evolution of the concept of the gene from Mendel to Molecular Level.

Or

Write a short note on Linkage and Crossing-over.

4. Explain the concept of Biotechnology along with its scope.

Or

What is Protoplast Culture ? Explain the steps involved and its importance.

5. Compare the breeding methods for self-pollinated, cross-pollinated and vegetatively propagated crops.

Or

Mention the role of polyploidy and mutation in plant breeding.

6. What are the measures of Central Tendency ? Explain any *one* of them.

Or

What do you understand by Hypothesis Testing ? Why is it important ?

Section–C

10 each

Answer any *three* out of five. Answer should not exceed **500** words in each question.

7. What is RNA Processing ? Explain the process and importance.
8. Explain Polyploidy and its role in evolution.
9. Describe the basic steps of Recombinant DNA Technology.
10. What is Heterosis and Inbreeding Depression ? Why are they important in plant breeding ?
11. What is Correlation ? Explain its concept and uses.