

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BPF-2178

M.Sc. (Final) Examination, 2022

BOTANY

Paper - VI

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

Time : 3 Hours]

[Maximum Marks : 75

Section-A

(Marks : 2 × 10 = 20)

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

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.

Section-C

(Marks : 10 × 3 = 30)

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

Section-A

1. What do you understand by the following ?

(i) DNA sequencing

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(1)

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- (ii) DNA renaturing
- (iii) Cytoplasmic inheritance
- (iv) RNA copping
- (v) Linkage
- (vi) Tryptophan operon
- (vii) Cybrid
- (viii) Polyploids
- (ix) Inbreeding depression
- (x) Variance

Section-B

2. Write a detailed note on DNA replication.

Or

Write a note on PCR and its application.

3. Explain Lac operon.

Or

Write short note on chromosomal mapping and polygenic inheritance.

4. Write the application of recombinant DNA Technology.

Or

What is Biotransformation ? Explain the steps involved and its importance.

5. Write a detailed note on uses of polyploid and mutant in plant breeding.

Or

Write a note on production and application of hybrid vigour in plant breeding.

6. Write a note on correlation and its uses.

Or

What is Chi-square test ? Why is it important ?

Section–C

7. Write a detailed note on isolation, purification and culture of protoplast.
8. What is Probability ? Explain positive and negative binomial.
9. Write a detailed note on genetic engineering and its principles.
10. Write a detailed note on structure and types of RNA and also explain transcription.
11. Write a detailed note on types of mutation and also describe chemical and physical mutagens.