

9201

M. Sc. IVth SEMESTER EXAMINATION, 2019

BOTANY

Paper – I

Genetic Engineering of Plants

Time: Three Hours

Maximum Marks: 80

PART – A (खण्ड – अ)

[Marks: 20]

Answer all questions (50 words each).

All questions carry equal marks.

सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न का उत्तर 50 शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

PART – B (खण्ड – ब)

[Marks: 40]

Answer five questions (250 words each),

selecting one from each unit. All questions carry equal marks.

प्रत्येक इकाई से एक-एक प्रश्न चुनते हुए, कुल पाँच प्रश्न कीजिए।

प्रत्येक प्रश्न का उत्तर 250 शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

PART – C (खण्ड – स)

[Marks: 20]

Answer any two questions (300 words each).

All questions carry equal marks.

कोई दो प्रश्न कीजिए। प्रत्येक प्रश्न का उत्तर 300 शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

PART – A

- Q.1 (i) Define microarrays.
(ii) What is plasmid? Give names of any two transformed plasmids.
(iii) What are catalytic RNA? Give two examples.
(iv) “The split-gene arrangement represent an ancient feature of genome”. Give two regions to support this view.
(v) What is chloroplast transformation?
(vi) What are transgenic plants? Give two examples of transgenic plants.
(vii) What are Bt. Cotton?
(viii) Write any two sites for gene therapy.
(ix) Define biochips.
(x) Write any two uses of seed and cell bank.

PART – B

UNIT – I

- Q.2 Explain Southern and Northern blotting in detail.

OR

Describe DNA finger printing.

UNIT – II

- Q.3 Explain RNA Silencing in plants.

OR

Write short note on alternative splicing.

UNIT – III

- Q.4 Describe various methods of gene transfer with illustrations.

OR

Describe herbicide resistance transgenic plants in detail.

UNIT – IV

- Q.5 Explain types and mechanism of gene therapy.

OR

Write protein engineering in detail.

UNIT – V

- Q.6 Describe Hybridoma technology in detail.

OR

Write short notes on -

- (a) Cryopreservation
(b) Nucleic Acid Probes

PART – C

- Q.7 What are PCR? Write its types and functions in detail.
Q.8 Write ecological and ethical issues associated to GM crops and GM food.
Q.9 Explain productions of industrial enzymes and biodegradable plastics in detail.
Q.10 Describe various environmental impact of herbicide resistance crops and superweeds.