

PE-502  
(544) M.Sc. BOTANY (FOURTH SEMESTER)

Examination JUNE 2022

Compulsory/Optional

Group-

Paper-

Name/Title of Paper- GENETIC ENGINEERING OF PLANT AND MICROBES & BIostatISTICS

Time: Three Hours

Maximum Marks-080

Minimum Passing Marks-029

नोट: दोनों खण्डों से निर्देशानुसार उत्तर दीजिए। प्रश्नों के अंक उनके दाहिनी ओर अंकित हैं।

Note: Answer From Both the Section as Directed. The Figures in the right-hand margin indicate marks.

Section-A

1- Answer the following objective type questions:- 1x10=10

- a. What is a GMO plant?
- b. What is DNA finger printing?
- c. Who invented the first PCR machine?
- d. What is the importance of genetic engineering of plants?
- e. Who uses genetic engineering?
- f. When did genetic engineering start?
- g. What is Microbial Genetic Manipulation?
- h. What microbes contain genes?
- i. What is the main goal of genomics?
- j. What is the use of statistics in botany?

2- Answer the following short answer type questions:- 2x5=10

- a- What are two uses of recombinant DNA?
- b- How does genetic engineering make plants grow faster?
- c- How are plants genetically modified?
- d- What factors affect bacterial transformation?
- e- Why is it important to study both genomics and proteomics?

Section-B

Answer the following long answer type questions:- 15x4=60

3- Describe the gene cloning principal and techniques.

Or

Write in brief:-

- a. Choice of vectors
- b. Polymerase Chain Reaction (PCR)

4- Explain the chloroplast transformation and its utility?

Or

Write notes on:-

- a. Transgenic plants
- b. Agrobacterium

5- Describe the selection of recombinants and transformation

Or

Write notes on:-

- a. Nitrogen fixer Bacteria.
- b. Bacterial Transformation.

6- What is artificial chromosome and explain the molecular markers?

Or

Write notes on:-

- a. Standard error.
- b. Chi-square test.