



বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY

Question Paper

B.Sc. Honours Examinations 2020

(Under CBCS Pattern)

Semester - VI

Subject: BOTANY

Paper: CC - 14 (T + P) (Plant Biotechnology – Theory + Practical)

Full Marks: 40 (Theory) + 20 (Practical) = 60

Time: 4 Hours

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

Questions are of equal value.

Answer any **one question** [within 250 words] from each Part.

Part A: Plant Biotechnology (Theory)

1. Write major characteristic features of plasmid vector PBR322.
2. Mention application of biotechnology in Pest resistance.
3. Give a brief account of gene cloning.
4. Write about the different types and biological role of restriction endonuclease.
5. Write short notes on marker and reporter gene.
6. Write a brief note on micropropagation technique and its application.
7. Briefly describe about the role of transgenics in bioremediation.



8. Write note on Luciferase and GUS.
9. Mention the sources and uses of three industrially important enzymes.
10. What is germplasm conservation? Write down the procedure of cryopreservation.
11. Write a short note on androgenesis.
12. Write short notes on *flavr savr* tomato and golden rice.

Part B: Plant Biotechnology (Practical)

1. Describe the aseptic method for sterilizing different explants for *in vitro* culture.
2. Write note on somatic embryogenesis.
3. Describe the procedure for isolation of protoplasts from plant cell.
4. Describe the methods of *Agrobacterium*-mediated gene transfer.
5. Write down the steps for production of Bt cotton.
6. Mention the procedure for isolation of plasmid DNA.
7. Mention the requisites of agarose gel electrophoresis for separation of DNA.
8. Write the steps for embryo culture.
9. Write the steps for anther culture.
10. Mention the utility of restriction mapping.
11. Mention different macronutrients, micronutrients and other supplements in plant tissue culture medium.
12. Mention the procedure for synthetic seed production.