

M.Sc. (Botany) Semester - 2 (CBCS) Examination
April/May-2023 (OLD COURSE)
BIOTECHNOLOGY AND IMMUNOLOGY(CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q .1 Answer the following. (any seven out of ten, each of **two marks) (14)**

1. Mention the media used for plant tissue culture.
2. Define important techniques for animal tissue culture.
3. Write feature of pUC18 plasmid.
4. What is autoimmunity? explain in brief.
5. Define IgG in brief.
6. What is in situ bioremediation?
7. Define immobilization of enzyme.
8. What is protoplast culture?
9. Define complementation in brief
10. Explain the MCS region.

Q. 2 Answer the following. (any two out of three) (14)

1. Describe the bioremediation techniques and explain *ex situ* bioremediation.
2. Write a note on animal tissue culture.
3. Explain the principle and application of immobilized enzymes.

Q.3 Answer the following. (any two out of three) (14)

1. Explain the role of genetic engineering in biotechnology.
2. Write a note on cosmid vector.
3. Describe the principle and procedure of bacterial DNA isolation method.

Q.4 (A) Answer the following. (any two out of three) (10)

1. Explain any one method of Ag-Ab interaction.
2. Explain the principle of monoclonal antibody and explain its applications.
3. What is hypersensitivity? explain type-II reaction.

Q.4 (B) Answer the following. (any One out of two) (04)

1. Write a note on IgA.
2. Explain innate immune system in detail.

Q.5 Answer the following. (any two out of three) (14)

1. Describe basic principle and application of plant tissue culture.
2. Explain the types of plant tissue culture.
3. Write a short note on a callus culture.
