

B.Sc Sem.-6 (Rep) Examination**CC 308****Biotechnology****September-2024****Time : 2-30 Hours]****[Max. Marks : 70**

1. Discuss briefly steps involved in artificial insemination of cattle and birds.

14

OR

(A). Explain the development of knock-out mice and its importance.

7

(B). Describe the methods of commercial cultivation of honey bees.

7

2. Discuss any two transformation techniques used in producing transgenic plants with examples.

14

OR

(A). Write about plant gene manipulation of transposons.

7

(B). Describe methods of RNA induced gene silencing.

7

3. Explain methods to isolate protoplast and its fusion.

14

OR

(A). Write about production of callus culture.

7

(B). Explain briefly Somaclonal variations and its applications.

7

4. Describe about GM food parameters for improvement of vitamins, lipid, iron and protein with examples.

14

OR

(A). Explain mechanism of *Bacillus thuringiensis* delta-endotoxin.

7

(B). Discuss probiotics and prebiotics and its importance.

7

5. Answer any **seven** of the following:

14

1. Write scientific name of silkworm and name the silk produced by it.

2. Name four products produced by transgenic animal bioreactor through milk.

3. Write importance of Gene-bank.

4. Name trait improved in tobacco and maize.

5. Name any two edible vaccines and its importance.

6. Name media and its composition used in plant tissue culture.

7. Write four applications of plant tissue culture.

8. What is totipotency and suspension culture?

9. Which part of plant studied for producing virus free plant and its significance?

10. What is seed bank?

11. What is fermented food? Write two examples.

12. Name two transgenic fish with its improved traits.

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