

Seat No. : _____

SJ-117

September-2020

B.Sc., Sem.-VI

**CC-308 : Biotechnology
(Agriculture Biotechnology)**

Time : 2 Hours]

[Max. Marks : 50

- Instructions :** (1) Draw figures wherever necessary.
(2) Show question number against each answer.
(3) Figures in right are marks.
(4) Answer any **Three** out of initial **Eight** main questions, Question **9** is compulsory.

1. (A) Write a detailed note on commercial production of silk using sericulture. 7
(B) Write note on Transgenic animals. 7
2. (A) Explain gene transfer in fish and its applications. 7
(B) Illustrate gene knock-out technology in detail. 7
3. (A) Explain manipulation of Chloroplast and Mitochondrial genome and its advantages over genes transferred within nucleus. 7
(B) Discuss plant transformation by Electroporation and particle gun methods. 7
4. (A) Write a note on Transgenic plants giving example of Golden rice. 7
(B) Elaborate *Agrobacterium* mediated gene transfer in plants and its applications. 7
5. (A) What is GM food ? Write parameters to improve GM foods with examples. 7
(B) Describe molecular action and expression of δ -endotoxin of *B. thuringiensis*. 7
6. (A) What is Probiotic ? Write a detailed note on probiotics and its applications. 7
(B) Discuss scope for genetic improvement of oil-seed crops using biotechnology. 7

7. (A) Describe Structure, Genetic system, Replication and Pathogenesis of HIV. 7
 (B) Discuss structure of TMV with labelled diagram. 7
8. (A) Explain Structure and Pathogenesis of SARS. 7
 (B) Describe Genetic system and Pathogenesis of Rabies virus. 7
9. Answer in Short : (Any **Eight**) 8
- (1) What is 'Project Tiger' ?
 - (2) Differentiate between gene 'knock-in' and 'knock-out'.
 - (3) What is Apiculture ?
 - (4) Transgenic animals can be used as Bioreactor. (True or False)
 - (5) How gene bank could help conservation ?
 - (6) What is Pronuclear injection ?
 - (7) Give importance of *Ri*-plasmid.
 - (8) What is the role of Dicer in RNA-induced gene silencing ?
 - (9) What is Quelling in gene expression ?
 - (10) Differentiate between miRNA and siRNA.
 - (11) What is lineage sorting in construction of phylogenetic tree ?
 - (12) Draw schematic gene construct to produce Bt-cotton.
 - (13) What is seed bank and why is it importance ?
 - (14) Which committee in India approves genetically engineered products ?
 - (15) Give biotechnological importance of *Methylophilus Methylophilus*.
 - (16) What is 'temporal' gene expression ?
 - (17) What are Bioherbicides ?
 - (18) Which year WHO declared India a polio free country ?
 - (19) Give two examples of Oncogenic virus.
 - (20) Which was the first prion disease discovered ?
 - (21) What is mode of action of TMV ?
 - (22) What is Hydrophobia ?