

Q.P. Code :32309

[Time: Two and half Hours]

[Marks:75]

Please check whether you have got the right question paper.

N.B: Attempt all the questions

All questions carry Equal marks

Draw neat labeled diagrams wherever necessary

- Q.1** a. Give the importance of (**any three**) **03**
- i) Peptide vaccines
 - ii) Primers
 - iii) VNTRs
 - iv) Micro projectile
 - v) ddNTP
 - vi) DNA fingerprinting

- b. Attempt the following (**any two**) **12**
- i) Comment on the advantages of genetic immunization
 - ii) Justify: vaccinia virus is an ideal candidate as vector vaccines.
 - iii) Give an account of Sanger's method for DNA sequencing
 - iv) Diagrammatically explain Southern blotting

- Q.2** a. Do as directed (**any three**): **03**
- i) Define: electroporation
 - ii) State the importance of cry protein.
 - iii) Which is the gene coding for phytoene synthase in production of golden rice?
 - iv) What is triparental mating?
 - v) What is mini-binary vector?
 - vi) Define: microprojectile

- b. Attempt the following (**any two**): **12**
- i) Elaborate on the application of recombination DNA technology in improving the quality of food
 - ii) Elaborate on protoplast fusion
 - iii) Discuss: Ti plasmid mediated vector system
 - iv) Write a note on the ballistic method of DNA delivery to create transgenic plant.

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- Q.3** a. What do you understand by the following terms? (**any three**): **03**
- Retrovirus
 - Pronucleus
 - Pluripotency
 - Selectable marker gene
 - Cre-*loxP* recombination
 - Enucleation

- b. Elaborate the following (**any two**): **12**
- Establishment of transgenic mouse with engineered embryonic stem cells
 - Construction of a lentivirus derived vector
 - Cre-*loxP* recombination system for inactivation a gene
 - Transgenic fish as biosensors for environmental pollution

- Q.4** a. Explain the following (**any three**): **03**
- Hyperlink
 - SRS
 - NCBI
 - Browser
 - URL
 - FASTA

- b. Answer the following (**any two**): **12**
- Give a detailed account of scope and applications of Bioinformatics
 - What is internet? Explain the role of played by internet in Bioinformatics
 - Discuss: Tools used for sequence alignment
 - Elaborate on DNA database

- Q.5** Write short notes on (**any three**): **15**
- Applications of transgenic animals.
 - BLAST
 - Application of PCR
 - HSV subunit vaccine
 - Liposome mediated transgenesis
 - Edible Vaccines
