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.

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

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

Q.4   **a.** Explain the following **(any three):**   **03**
- i) Hyperlink
- ii) SRS
- iii) NCBI
- iv) Browser
- v) URL
- vi) FASTA

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

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

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