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**

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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