Q.P. Code :01208

[Time: $2\frac{1}{2}$ Hours] **[Marks:75]**

Please check whether you have got the right question paper.

N.B: 1. Attempt **all** questions.
2. All **questions** carry **equal marks.**
3. **Draw** neat labelled **diagrams** wherever necessary.

Q.1 a. Give the role/application of **(any three):-** **03**

i. Probe
ii. VNTR
iii. RFLP
iv. Primers
v. Peptide vaccine
vi. Subunit vaccine

b. Discuss the following **(any two):-** **12**

i. Southern Hybridization.
ii. DNA Typing.
iii. Genetic immunization.
iv. Vector vaccines.

Q.2 a. Explain the significance of the following (**any three):-** **03**

i. Opines
ii. T-DNA
iii. Disarming
iv. Helper plasmid
v. PEG
vi. Cry gene

b. Attempt the following (**any three)**:- **12**

i. Give an account of Bt cotton and its applications.
ii. Give an account of 'Microprojectile bombardment as a method of producing transgenic plants'.
iii. Schematically explain the production of T-DNA copy.
iv. What are edible vaccines? State their advantages.

Q.3 a. Define the following **(any three):-** **03**

i. Pluripotency
ii. Retrovirus
iii. Transgene
iv. Knock out mouse
v. cre gene
vi. Male pronucleus

b. Give an account of the following **(any two):-** **12**

i. Use of Cre- loxP recombination to regulate the expression of transgene.
ii. Embryonic stem cell method of producing transgenic mice.
iii. Transgenic mouse as model system to study human disease.
iv. Cloning livestock by nuclear transfer.

Q.4 **a.** Explain of the following terms **(any three):-** **03**

i. Book mark
ii. HTML
iii. DDBJ
iv. WWW
v. IP address
vi. BLAST

b. Answer the following **(any two):-** **12**

i. Discuss: NCBI and its importance in Bioinformatics.
ii. What are Data retrieval tools? Give an account of the data retrievals tools and their importance.
iii. Write a note on Internet and its protocols associated with Bioinformatics.
iv. Elaborate on: Protein databases.

Q.5 Write short notes on **(any three):-** **15**

a) RT – PCR.
b) Cholera vaccine.
c) Electroporation.
d) Mode of action of Bt toxin.
e) Transgenic fish as biosensors of environmental pollutants.
f) Applications of Bioinformatics.
