

Bachelor of Science (B.Sc.) Sixth Semester (New) Examination
MICROBIOLOGY
(Microbial Biotechnology & Recombinant DNA Technology) (New)
Paper—2

Time : Three Hours]

[Maximum Marks : 50

N.B. :— **119** All questions are compulsory and carry equal marks.

(2) Draw well labelled diagram wherever necessary.

1. Write notes on :—

- | | |
|------------------------------|----|
| (a) Restriction Endonuclease | 2½ |
| (b) Electroporation method | 2½ |
| (c) pBR 322 | 2½ |
| (d) Gene library | 2½ |

OR

- | | |
|---|----|
| (e) Microinjection method of transformation | 2½ |
| (f) PCR | 2½ |
| (g) Lambda phage as a vector | 2½ |
| (h) DNA Finger Printing | 2½ |
2. Describe production of insulin hormone by rDNA technology. 10

OR

- What is hybridoma technology ? Discuss the production of monoclonal antibody. 10
3. Discuss in detail genetically modified food with suitable example. 10

OR

- What is transgenic plant ? Discuss detail process of BT cotton plant production. 10
4. (a) Discuss production of amylase enzyme by deep tank method. 5
- (b) Write note on biochip with its application. 5

OR

- | | |
|---|---|
| (c) Discuss production of amylase enzyme by SSF method. | 5 |
| (d) Give general concept and application of Biosensors. | 5 |

Attempt any ten :—

- (i) What is palindrome sequence in DNA ?
- (ii) Define linkers.
- (iii) What is YAC ?
- (iv) What is IFN ?
- (v) What is DPT ?
- (vi) Define edible vaccine
- (vii) Define protoplast.
- (viii) Define biopesticides.
- (ix) Give any two examples of blue green algae as biofertilizer.
- (x) What are totipotent cells ?
- (xi) What is immobilization technique ?
- (xii) Give any two hazards of biotechnology.

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NRT/KS/19/2180

Bachelor of Science (B.Sc.) Semester–VI Examination

BIOTECHNOLOGY

Optional Paper—2

(Microbiology)

Time : Three Hours]

[Maximum Marks : 50

N.B. :— (1) **All** questions are compulsory and carry equal marks.

(2) Draw diagrams wherever necessary.

1. (a) Write different types of restriction enzymes. 5
(b) Describe PBR322 vector. 5

OR

- (c) Describe PCR technique and add a note on its applications. 10
2. (a) Explain in detail production of Insulin. 10

OR

- (b) Discuss the production of monoclonal antibody. 10

3. Write notes on :

- (a) Chemical method of protoplast fusion. 2½
(b) Applications of biopesticides. 2½
(c) Bacterial biofertilizer. 2½
(d) Ethics of biotechnology. 2½

OR

- (e) Application of protoplast fusion. 2½
(f) Glucose biosensor. 2½
(g) Applications of nanobiotechnology. 2½
(h) Hazards of biotechnology. 2½
4. (a) Explain the production of miso. 10

OR

- (b) Explain in detail development of Knockout mice. 10

5. Solve any **ten** of the following :

- (a) What is endonuclease ? 1
(b) Define plasmid. 1
(c) Give the source of Taq polymerase. 1
(d) What is ATS ? 1
(e) Define toxoid. 1
(f) Give two examples of edible vaccine. 1
(g) Give two applications of biochip. 1
(h) What is micro array ? 1
(i) Give two names of fungal biopesticides. 1
(j) What is milching animal ? 1
(k) What does Bt stand for ? 1
(l) Define GM foods. 1