

61527

Fifth Semester B.Sc. Degree Examination, April/May 2023  
(CBCS Scheme)

BIOTECHNOLOGY (Paper – V)

Genetic Engineering and Environmental Biotechnology

Time : 3 Hours

Max. Marks : 70

**Instruction :** Draw a **neat** labelled diagram **wherever** necessary.

SECTION – A

- I. Write short notes on the following. (5×2=10)
- 1) Expression vector
  - 2) ECOR 1
  - 3) Taq polymerase
  - 4) Biogas
  - 5) Bioleaching.



SECTION – B

- II. Answer **any four** of the following. (4×5=20)
- 6) Explain insertional inactivation.
  - 7) Write a note on Northern blotting.
  - 8) What is recombinant screening ? Add a note on the different method of selection of recombinant host cells.
  - 9) Give an account on genetically modified organisms.
  - 10) Explain the insitu and exsitu bioremediation with their merits and demerits.

SECTION – C

- III. Answer **any three** of the following. (3×10=30)
- 11) Give an account on cloning vectors.
  - 12) Illustrate the production of Hepatitis B vaccine.
  - 13) Explain DNA sequencing.
  - 14) Discuss the production of Biogas. Add a note on its applications.
  - 15) Explain symbiotic N<sub>2</sub> fixation in bacteria.

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## SECTION - D

IV. Answer the following.

(10×1=10)

- 16) What is self priming ?
- 17) Name the antibiotic resistance marker in pUC19.
- 18) Expand BOD.
- 19) What is genomic library ?
- 20) What are adaptors ?
- 21) Name the micro-organisms used in bioleaching of copper.
- 22) What is the temperature for polymerization in PCR ?
- 23) Give an example for biofertilizer.
- 24) Give an example for conventional fuel.
- 25) Define biopesticide.

## SECTION - B

ii. Answer any four of the following.

- 6) Explain insertional inactivation.
- 7) Write a note on  $\lambda$  phage.
- 8) What is recombinant screening? Add a note on the different methods of selection of recombinant host cells.
- 9) Give an account of genetically modified organisms.
- 10) Explain the inheritance and expression of quantitative traits.

## SECTION - C

iii. Answer any three of the following.

- 11) Give an account on cloning vectors.
- 12) Illustrate the production of Hepatitis B vaccine.
- 13) Explain DNA sequencing.
- 14) Discuss the production of Biogas. Add a note on its applications.
- 15) Explain symbiotic  $N_2$  fixation in bacteria.