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B.Sc./6th Sem (H)/BOT/23(CBCS)

2023

### 6th Semester Examination **BOTANY** (Honours)

Paper: DSE 3-T

[CBCS]

Full Marks: 40 Time: Two Hours

The figures in the margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable.

#### [Industrial and Environmental Microbiology] Group - A

Answer any *five* questions.  $2 \times 5 = 10$ 

- 1. What is BOD?
- 2. Name two immobilized enzyme.
- 3. Name two bacteria commonly found in air.
- 4. Name two nitrogen fixing cyanobacteria.
- 5. What is lyophilization?
- 6. What are TDS and TOC of water samples?
- 7. What is downstream processing?
- 8. Write down the name of the microorganism used in citric acid production. P.T.O.

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(2)

# Group - B

Answer any four questions.

 $5 \times 4 = 20$ 

- 9. Write about the applications of Tank fermenter and Tower fermenter.  $2\frac{1}{2}+2\frac{1}{2}$
- 10. Write a brief note on industrial application of casein hydrolysis and starch hydrolysis.2½+2½
- 11. Write a note on arbuscular mycorrhizal colonization in plant root.
- 12. Briefly describe the process of root nodule formation. 5
- Name different types of commercially produced enzymes and describe the process of manufacturing of any one enzyme.
- 14. What is biofertilizer? Write notes on significance of biofertilizer.

## Group - C

Answer any one question.

 $10 \times 1 = 10$ 

- 15. Write a note on bioremediation of contaminated soil. Elaborately describe the role of microbes in sewage and domestic waste water treatment systems. 5+5
- 16. Differentiate between batch and continuous fermentations.

  Describe the components of a typical bioreactor. 5+5

OR STORY

OR [Bioinformatics]

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Group - A

2×5=

Answer any five questions.

What is the full form of DDBJ and NCBI?

- Name a software for prediction of secondary structure of a protein.
- 3. What are the database retrieval tools of NCBI?
- 4. What is PIR?
- 5. What is DBMS? Mention two main types of data organization.
- 6. What is CLUSTALW alignment?
- 7. What is phylogram?
- 8. What is the difference between global and local sequence alignment?

### Group - B

Answer any four questions.

5×4=20

- 9. Write the differences between PAM and BLOSUM. 5
- 10. Write a brief account on specialised tools and databases of NCBI.

P.T.O.

- 11. What are the goals and applications of Bioinformatics?512. What is BLAST? What are types of BLAST? 1+4
- 14. What are the difference between phenetic and cladistic approach? 5

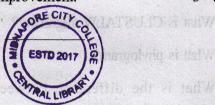
13. Describe the word method for alignment of sequence. 5

#### Group - C of SHAFTOR A SHELL

Answer any one question.

 $10 \times 1 = 10$ 

- 15. Describe with suitable examples the different types of biological databases.
- 16. Give the applications of bioinformatics in drug discovery, QSAR and crop improvement. 3+4+3



9. Why the differences between PAM and BLOSUM. 33