

(i) Printed Pages : 3 Roll No.

(ii) Questions : 9 Sub. Code :

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Exam. Code :

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**B.Sc. (Hons.) Biotechnology 4th Semester
(2054)**

AGRO & INDUSTRIAL BIOTECHNOLOGY

Paper : BIOT-405-T

Time Allowed : Three Hours]

[Maximum Marks : 67

Note :— Attempt **five** questions in all, Question No. 1 is compulsory.
Attempt **one** question from each Unit.

1. (a) What is secondary screening of industrially important microbes ?
- (b) What is Lyophilization ?
- (c) What is significance of process optimization ?
- (d) Why selection pressure is important in maintaining hyper producers ?
- (e) Enlist substrates which can be used for ethanol production.
- (f) Give function of proteases.
- (g) Enlist properties of fungal single cell proteins.
- (h) Which microorganisms are responsible for aging of cheese ?
- (i) What is composting ?
- (j) What are secondary metabolites ? 1.5×10

UNIT—I

2. (a) What is primary screening of industrially important microbes ? Discuss various methods.
(b) Differentiate between microbial industrial process and chemical industrial process. 7,6
3. (a) Discuss methods of identification of industrially important microbes.
(b) Give long term preservation techniques of microorganisms. 7,6

UNIT—II

4. (a) How mutations help in improvement of industrial microbes ? Explain.
(b) Write short notes on the following :
(i) Media formulation
(ii) Development of auxotrophic mutants. 7,6
5. (a) What is strain improvement of industrial microbes ? Give its significance.
(b) Discuss various strategies with suitable examples. 4,9

UNIT—III

6. (a) Discuss production of amylases and cellulases.
(b) Explain in detail production of wine using microorganisms. 7,6
7. (a) Write note on the following productions :
(i) Penicillin
(ii) Vitamin B12.
(b) Explain the process of production of bread. 7,6

UNIT—IV

8. Write short notes on the following :—
- (a) Biopesticides
 - (b) Microbial biotransformation. 6,7
9. (a) What are single cell proteins ? How algal SCPs are produced ?
- (b) What is vermiculture and its significance ? 7,6