D 110227 **(Pages : 2)** **Name.....**

Reg. No.....

FIFTH SEMESTER (CBCSS–UG) DEGREE EXAMINATION, NOVEMBER 2024

Microbiology

MBG 5B 06—INDUSTRIAL MICROBIOLOGY

(2019 Admission onwards)

Time : Two Hours and a Half Maximum : 80 Marks

Wherever needed answers must be supported by structural illustrations and diagrams.

Section A

Short answer type questions.
Answer **all** *questions.*
Each question carries 2 marks.

Write briefly on :

1. Giant colony technique.
2. Sulphite waste liquor.
3. Trade marks.
4. Continuous fermentation.
5. Baffles.
6. Pseudo vitamin B12.
7. Lyophilization.
8. Salting out.
9. Heterolactic acid fermentation.
10. Primary metabolite.
11. Beet Molasses.
12. Precipitation.
13. White wine.
14. Bakers yeast.
15. Precursors.

(Maximum: 25 marks)

Turn over

Section B

Paragraph type questions.
Answer **all** *questions.*
Each question carries 5 marks.

Write notes on :

1. What are the methods of strain improvement ? Describe.
2. Outline the production of Lactic acid from whey
3. Discuss on various downstream process used in industry
4. Briefly explain on citric acid fermentation
5. What are the screening methods for microbial isolations ? Give details.
6. Give an account on legal protection of biotechnological inventions.
7. Give details on acetone -butanol fermentation.
8. Give comparative account on different types of acetic acid fermentations.

(Maximum : 35 marks)

Section C

Essay type questions.
Answer any **two** *questions.*
Each question carries 10 marks.

Write essay on :

1. Explain various screening techniques for industrially important microorganisms.
2. Explain the industrial productions of Antibiotics-penicillin.
3. Describe the Industrial ethanol fermentation methods from various sugar substrates.
4. Describe the design of a Fermenter. Add a note on bioprocesses design and concepts.

(Maximum 2 × 10 =20 marks)