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Name.....

Reg. No.....

**FIFTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2023**

Microbiology

MBG 5B 06—INDUSTRIAL MICROBIOLOGY

(2019 Admission onwards)

Time : Two Hours and a Half

Maximum : 80 Marks

Section AI. Write short answer to *all* the following. Each question carries 1 marks:

- 1 Antifoam agents.
- 2 Microbial transformation.
- 3 Inhibitor used in fermentation medium.
- 4 Sparger.
- 5 Baffles.
- 6 Phenyl acetic acid.
- 7 Fed batch culture.
- 8 Baker's yeast.
- 9 Cyanocobalamine.
- 10 Primary Screening.
- 11 Surface culture technique.
- 12 Crowded plate method.
- 13 Trophophase.
- 14 Amylases.
- 15 Secondary metabolites.

(Maximum = 25 marks)

Turn over

Section B

II. Answer any *five* of the following :

- 16 What are the various types of fermentor ?
- 17 Briefly discuss the components of fermentation process.
- 18 Illustrate the industrial production of Vitamin B2.
- 19 Describe the fermentation of wine.
- 20 What are the major methods used for strain improvement ? Discuss with examples.
- 21 Examine the steps involved in the industrial production of citric acid.
- 22 Discuss the industrial production of ethanol.
- 23 Expand WIPO. Discuss the relevance of WIPO

(Maximum = 35 marks)

Section C

III. Answer any *two* questions. Each question carries 10 marks :

- 24 Elucidate the principle, upstream and downstream processing involved in the industrial production of Penicillin.
- 25 Investigate various processes involved in the extraction and purification of extracellular and intracellular products.
- 26 Inspect various kinds of IPR with suitable examples.
- 27 Elaborate the industrial production microbial enzymes with suitable examples.

(Maximum : $2 \times 10 = 20$ marks)