

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

(CUCBCSS-UG)

Microbiology

MBY 5B 08—INDUSTRIAL MICROBIOLOGY

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all questions.**Each question carries 1 mark.*

1. The conversion of a laboratory procedure to industrial process is termed as _____.
2. Which of the following is not a carbon source in fermentation medium :
 - (a) Molasses.
 - (b) Sulphur waste liquor.
 - (c) Corn steep liquor.
 - (d) Cellulose.
3. Chemostat is an example of _____.
4. A disc or tube like device used to introduce the air into the fermentation medium _____.
5. A silicon heating jacket or cooling jacket is used in fermentor for _____.
6. The process in which improve the microbe's productivities or characteristics and make the organism more appropriate for industrial fermentation _____.
7. Crowded plate technique is used for _____.
8. Name a chemical agent used in strain improvement.
9. Cyanocobalamin is otherwise known as _____.
10. The fungi *Ashbya gossypii* is used for _____.
11. Give an example of an aromatic antibiotic.
12. Expand WIPO.

(12 × ½ = 6 marks)

Part B*Answer all questions.**Each question carries 2 marks.*

13. What do you mean by fed batch culture ?
14. How the pH and temperature control is carried out in a fermenter ?
15. What are the points to be considered while formulating the medium for industrial fermentation ?
16. Write a short note on ionexchange chromatography.

Turn over

17. What do you mean by Acetone butanol fermentation ?
18. What is the function of precursor and inducers in fermentation medium ?
19. What is microbial transformation of steroids ?
20. What are the various types of wine ?
21. Differentiate between primary and secondary screening.
22. What are the major objectives of WIPO ?

(10 × 2 = 20 marks)

Part C

*Answer any **six** questions.
Each question carries 5 marks.*

23. Discuss various types of cultures used in fermentation with appropriate examples.
24. Discuss the applications of computers in fermentation technology.
25. Narrate the applications of solid state fermentation with examples.
26. Illustrate the industrial production of lactic acid.
27. What are the various approaches used for the improvement of strains for industrial fermentation ?
28. Discuss the industrial production of ethanol.
29. What do you mean by IPR ? What are the various types of IPR ?
30. Write critical notes on geographical indicator and its role in IPR.

(6 × 5 = 30 marks)

Part D

*Answer any **two** questions.
Each question carries 12 marks.*

31. Investigate various processes involved in the extraction and purification of extracellular and intracellular products.
32. Elaborate in detail on various methods employed for the preservation of cultures.
33. Elucidate the principle, upstream and downstream processing involved in the industrial production of Penicillin.

(2 × 12 = 24 marks)