

C 1849

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Name.....

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2016

(UG-CCSS)

Core Course—Microbiology

MB 6B 17—INDUSTRIAL MICROBIOLOGY

Time : Three Hours

Maximum : 30 Weightage

Section A

Answer all twelve questions.

1. Baffles are :

- (a) Blades of agitator fixed on impeller.
- (b) Blades of foam breakers.
- (c) Blades/obstructions on the walls of **fermentor**.
- (d) None of the above.

2. In the commercial fermentation to produce vinegar the starting material used is ———

- (a) Molasses solution.
- (b) Wood shavings.
- (c) Ethanol solution.
- (d) Corn steep liquor.

3. During preparation of sterile media for commercial fermentation it is done in 10X concentration this is to ———

- (a) Reduce the volume so that it can be accommodated in relatively small vessel during sterilization.
- (b) To conserve energy.
- (c) To make handling easy.
- (d) All of the above.

4. Penicillin G is commercially produced today mainly for ———

- (a) To use it as a therapeutic agent.
- (b) To use it as raw materials for production of semi synthetic penicillin.
- (c) To use it as raw materials for production of other antibiotics.
- (d) All of the above.

5. Aeration become difficult when media ———

- (a) Is in large volume.
- (b) Is more viscose.
- (c) Is inoculated with fungal mycelia.
- (d) All of the above.

Turn over

6. Sterilization of air to incorporate into the media is done by _____
 (a) Filtration. (b) Autoclaving.
 (c) Electrostatic precipitation. (d) Both (a) and (c).
7. Lipase is an enzyme commercially used by the _____
 (a) Brewing industry. (b) Meat processing industry.
 (c) Fruits and pulp industry. (d) Detergent industry.
8. Bouquet of wine means _____
 (a) Different wines mixed together. (b) Different colours of wine.
 (c) Taste and aroma of wine. (d) None of these.
9. *Penicillium roquefortii* is commercially used for _____
 (a) Production of Penicillin G. (b) Production of Ampicillin.
 (c) Production of Cheese. (d) Production of Yoghurt.
10. *Pseudomonas fluorescens* is _____
 (a) Used as a biocontrol agent in agriculture.
 (b) Used as a biofertilizer in agriculture.
 (c) Used as a bioinsecticide in agriculture.
 (d) Used in fermentative production of fluorescin.
11. Salting out is a method used in _____
 (a) Upstream process. (b) Downstream process.
 (c) Fermentation process. (d) Both (b) and (c).
12. Continuous culture needs continuous addition of :
 (a) Sterile media. (b) Inoculums.
 (c) Water. (d) None of these.

(12 x 1/4 = 3 weightage)

Section

*Answer all questions.
 Each question carries 1 weightage.*

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|--------------------------------|----------------------------------|
| 13. Antifoam agents. | 14. Precursor. |
| 15. <i>Zymomonas mobilis</i> . | 16. <i>Spirulina</i> . |
| 17. Scale up. | 18. Sparging of O ₂ . |
| 19. Ripening of cheese. | 20. Culture preservation. |
| 21. <i>Azotobacter</i> . | |

(9 x 1 = 9 weightage)

Section C

*Answer any **five** questions.
Each question carries 2 weightage.*

22. What is Molasses ? Discuss briefly about the use of molasses as a media ingredient.
- 23.. Discuss briefly the production of vinegar.
24. Discuss briefly about the value addition of agricultural produce by microbial fermentation.
25. Differentiate between Active dry and Yeast and cream yeast.
26. Give an outline of the production of Yoghurt.
27. Discuss the role of yeast in leavening process of bread making.
28. Give an account of *Rhizobium* as a bio-fertilizer.

(5 x 2 = 10 weightage)

Section D

*Answer any **two** questions.
Each question carries 4 weightage.*

29. Discuss briefly about the industrial production of Amylase. List the important uses of this enzyme.
30. Discuss the industrial production of wine list important varieties of wine depending on alcohol content, sugar content and carbonation.
31. Discuss about the basic design of a **fermentor**. Give a brief functional account of each of the parts.

(2 x 4 = 8 weightage)