C 80117 (Pages : 3) Name

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2015

(U.G–CCSS)

Core Course—Microbiology

MB 6B 17—INDUSTRIAL MICROBIOLOGY

Time : Three Hours Maximum : 30 Weightage

Section A

Answer all **twelve** *questions.*

1. Lyophilization is synonymous with :

   (a) Freeze-drying. (b) Pasteurization

   (c) Filtration. (d) Spoilage.

2. Continues culture differ from batch culture by :

   (a) Continuously maintaining the temperature.

   (b) Continuously maintaining the pH.

   (c) Continuously maintaining the water level.

   (d) Continuously maintaining the substrate concentration.

3. _____ is an antibiotic closely related to the penicillin in chemical structure and antibiotic activity.

   (a) Tetracycline. (b) Chloramphenicol.

   (c) Cephalosporin. (d) Bacitracin.

4. Ingredients of industrial media used for the fermentation should be :

   (a) Cheap. (b) Easily available in abundance.

   (c) Easily sterilizable. (d) All of the above.

5. _____ is called strain improvement.

   (a) Tolerance of the strain to pH fluctuation is improved.

   (b) Production potential of the strain is improved.

   (c) Ability to grow over cheap resources are improved.

   (d) All of this.

Turn over

6. *Bacillus thuringiensis* is a _____

(a) Bio fertilizer. (b) Bio insecticide.

(c) Single cell protein. (d) None of the above.

7. It is mandatory that cultures and fermentation residues be sterilized before discard in case of *Eremothecium ashbyii* and *Ashbya gossypii* because they are :

(a) Human pathogens. (b) Animal pathogens.

(c) Plant pathogens. (d) Mutagens.

8. Soy sauce is produced by fermenting soya beans and wheat using _____

(a) *Penicillium roquefortii.* (b) *Penicillium camimbertii.*

(c) *Aspergillus oryzae.* (d) *Aspergillus niger.*

9. Heat shocking is a method used for _____

(a) Culture to preservation of *Clostridium.*

(b) Culture regeneration of *Clostridium.*

(c) Culture regeneration of yeast.

(d) Culture to preservation of yeast.

10. Corn steep liquor _____

(a) Is a fermented beverage. (b) A media ingredient.

(c) Precursor. (d) None of the above.

11. *Saccharomyces cerevisiae* is :

(a) Brewer's yeast. (b) Baker's yeast.

(c) Single cell protein. (d) All of the above.

12. Pectinase is an enzyme commercially used by the _____ industry.

(a) Brewery. (b) Meat processing industry.

(c) Pharmaceutical industry. (d) Fruits and pulp industry.

(12 x = 3 weightage)

Section B

Answer **all.**

Give a brief note on :

13. Batch sterilization.
14. Foam control in fermenter.
15. *Agaricus bisporus.*
16. Cavitator.
17. Leavening.
18. Rennet
19. Citric acid.
20. *Lactobacillus delbrueckii.*
21. 6 Aminopenicillanic acid.

(9 x **1** = **9** weightage)

Section C

Answer any **five** *out of seven.*

22. Discuss briefly the stages of Biogas formation in a biogas plant from cellulosic waste.
23. Discuss briefly about the VitaminB fermentation.
24. What do you meant by downstream process ? List important methods.
25. What is Single cell protein ? Discuss its importance with suitable examples.
26. Give an outline of industrial uses of enzymes.
27. Discuss the commercial production of cheese.
28. Give general account of inoculum preparation for industrial fermentation.

(5 x 2 =10 weightage)

Section D

Answer any **two.**

29. Discuss briefly about the Acetone Butanol fermentation.
30. What do you meant by strain improvement ? Give an account of important techniques used.
31. Discuss about the fermentative production of Penicillin ·

(2 x 4 = 8 weightage)