

C 30371

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Name.....

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2017

(CUCBCSS—UG)

Microbiology

MBY 5B 08—INDUSTRIAL MICROBIOLOGY

Time : Three Hours

Maximum : 80 Marks

(Draw diagrams wherever necessary)

Part A

I. Choose the correct answer :—

- 1 The bottom fermenting yeast used for ethanol production is :
 - (a) *Saccharomyces carlsbergensis*.
 - (b) *Candida albicans*.
 - (c) *Saccharomyces cerevisiae*.
 - (d) *Histoplasma capsulatum*.
- 2 Hydroxylation of progesterone in the 11 α position by the organism :
 - (a) *Trichoderma viridae*.
 - (c) *Bacillus cereus*.
 - (b) *Aspergillus niger*.
 - (d) *Rhizopus nigricans*.
- 3 The strain used for the production of fungal α amylase by using semisolid culture is :
 - (a) *Aspergillus oryzae*.
 - (c) *Rhizopus niveus*.
 - (b) *Mucor pusillus*.
 - (d) *Trichoderma viridae*.
- 4 The part of the fermenter that prevent vortex formation is :
 - (a) Sparger.
 - (c) Baffles.
 - (b) Impeller.
 - (d) Sampling port.

II. Fill in the blanks :

- 5 Agents added to cultures to prevent loss of viability due to ice crystal formation during preservation at low temperature are called as _____.
- 6 The limiting factor in beet molasses when compared with cane molasses is _____.

Turn over

7 A _____ is a sign used on products that have a specific geographical origin and possess qualities due to that origin.

8 Auxanography is used for the screening of strains producing _____.

III. Answer in one word :

9 Corn steep liquor is used in fermentation as a source of :

10 Name the most common preservative used in wine making.

11 The spent liquid from paper pulp industry that is used as raw material for fermentation media is :

12 Who discovered penicillin ?

(12 × ½ = 6 marks)

Part B

Answer all of the following in two to three sentences.

Each question carries 2 marks.

13 Patent infringement.

14 *Schizosaccharomyces pombe*.

15 Fringes generator.

16 Head space of fermenter.

17 Crowded plate technique.

18 Homolactic fermenters.

19 WIPO.

20 Air lift fermenter.

21 Antifoam agents.

22 Impellers.

(10 × 2 = 20 marks)

Part C

Write short notes on any six of the following.

Each question carries 5 marks.

23 Continuous culture system.

24 Citric acid production.

- 25 Industrial sterilization of media.
- 26 Stepping up of inoculums.
- 27 Solid state fermentation.
- 28 Raw materials for fermentation media.
- 29 Acetone-butanol fermentation.
- 30 Cell disruption techniques.

(6 × 5 = 30 marks)

Part D

Write essays on any two of the following.

Each question carries 12 marks.

- 31 With a suitable diagram explain different components of a biofermenter.
- 32 Define intellectual property rights. Discuss different steps involved in patenting of a product.
- 33 What are the high yielding strains used for penicillin production? Discuss the media, fermentation process and downstream processing in penicillin production.

(2 × 12 = 24 marks)