

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2018

(CUCBCSS—UG)

Microbiology

MBY 5B 08—INDUSTRIAL MICROBIOLOGY

Time : Three Hours

Maximum : 80 Marks

*Draw diagrams wherever necessary.***Part A***Answer all questions.**Each question carries ½ mark.***I. Choose the correct answer :**

- 1 An antifoam agent used in fermentation process is :
(a) Lard oil. (c) Acetone.
(b) Diethyl ether. (d) TrtonX-100.
- 2 The method not used for the sterilization of air for sparging into fermentation media is :
(a) Filtration. (c) Electrostatic precipitation.
(b) Heating. (d) Using radiation.
- 3 A yeast causing spoilage of wine by producing high concentration of ethyl acetate is :
(a) *Saccharomycodes ludwigii*. (c) *Candida albicans*.
(b) *Torulopsis stellata*. (d) *Histoplasma capsulatum*.
- 4 The most widely used filtration aid in the fermentation processes is :
(a) Polyethylene glycol. (c) Dimethyl sulfoxide.
(b) Kieselgaur. (d) Sodium dodecyl sulfate.

II. Fill in the blanks :

- 5 The primary screening of antibiotic producers is commonly done by ——— technique.
- 6 The organic nitrogen content of cane molasses is low due to the absence of ———.
- 7 Aranmula Kannadi is a ——— type geographical indication of Kerala.
- 8 The most commonly used strain for the industrial production of cyanocobalamine is ———.

III. Answer in one word :

- 9 Name two bacterial strains used for a amylase production.
- 10 Which vinegar process use Fringes generator.
- 11 The precursor used in penicillinG production is.
- 12 Use of high frequency vibrations for cell disruption is called.

(12 × ½ = 6 marks)

Turn over

Part B

*Answer all of the following in two or three sentences.
Each question carries 2 marks.*

- 13 Baffles.
- 14 *Penicillium chrysogenum*.
- 15 Liquid membranes.
- 16 Advantages of continuous sterilization.
- 17 Cryoprotectants.
- 18 Chemostat.
- 19 Geographical indications.
- 20 Auxanography.
- 21 Lyophilization.
- 22 Spargers.

(10 × 2 = 20 marks)

Part C

*Write short notes on any six of the following.
Each question carries 5 marks.*

- 23 Strategies for improvement of production strains.
- 24 Patentables and non-patentables.
- 25 Wine production.
- 26 Cyanocobalamine production.
- 27 Citric acid production.
- 28 Intellectual property rights.
- 29 Liquid- Liquid extraction of fermentation products.
- 30 Measured and controlled parameters in industrial fermentations.

(6 × 5 = 30 marks)

Part D

*Write essays on any two of the following.
Each question carries 12 marks.*

- 31 Briefly describe the strains and the fermentation process used for the production of ethanol.
- 32 What are the characteristics of an ideal fermentation media? Write a note on various raw materials used for the preparation of fermentation media.
- 33 Write notes on different types of fermenters.

(2 × 12 = 24 marks)