

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086g  
(For candidates admitted during the academic year 2004-05 & thereafter)

SUBJECT CODE: BT/MC/IM54

B. Sc. DEGREE EXAMINATION, NOVEMBER 2008  
BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY  
FIFTH SEMESTER

COURSE : MAJOR – CORE  
PAPER : INDUSTRIAL MICROBIOLOGY  
TIME : 3 HOURS  
MAX.MARKS:100

SECTION – A

I. ANSWER ALL QUESTIONS ( 5 x 1 = 5 )

Match the following:

- |    |                   |   |                           |
|----|-------------------|---|---------------------------|
| 1. | Biogas            | - | Citric acid               |
| 2. | Renneting         | - | <i>Rhizopus nigricans</i> |
| 3. | Wort              | - | Methanogens               |
| 4. | Biotransformation | - | Protease                  |
| 5. | Koji process      | - | <i>Humulus lupulus</i>    |

State whether true or false: ( 5 x 1 = 5 )

- Streptomycin is very effective against Gram negative bacteria.
- Alcohol is mainly brewed by continuous culture methods.
- The SNF content of milk for yoghurt production should be between 11 – 15%.
- Heterokaryons found in industrially important fungi, are resultant forms of parasexuality.
- The process of making the malt insoluble by using enzymes is called mashing.

Fill in the blanks with reference to any three parts of fermentor and their uses.

( 3 x 2 = 6 )

- |     | Part  | Use   |
|-----|-------|-------|
| 11. | _____ | _____ |
| 12. | _____ | _____ |
| 13. | _____ | _____ |

Name the source of the following products

( 2 x 1 = 2 )

- |     |               |       |
|-----|---------------|-------|
| 14. | Acetic acid   | _____ |
| 15. | Glutamic acid | _____ |

**II. Answer any six of the following in about 50 words each: (6 x 3 =18)**

16. Fluidized bed reactors
17. Lyophilization
18. ATCC
19. LAB
20. Uses of Vitamin A
21. Anti foaming agents
22. Uses of citric acid
23. SCP
24. Turbidostat

**SECTION – B**

**Answer any four questions. Each answer not to exceed 200 words. Draw diagrams wherever necessary: (4x6=24)**

25. List uses of amylase and protease enzymes.
26. What are the different approaches to scale –up of fermentation?
27. Write about the various phases involved in the production of Streptomycin.
28. How is wine produced using microbial fermentation?
29. Enumerate the steps that are involved in the production of Yoghurt.
30. Describe the functions of yeast in bread making.

**SECTION – C**

**Answer any two questions. Each answer not to exceed 1000 words. Draw diagrams wherever necessary: (2x20=40)**

31. Write an essay on media formulation for industrial fermentation.
32. Give a detailed account on the production of glutamic acid using microorganisms.
33. List out the steps involved in cheese production and bring out the salient features of cheddar, Roquefort and camembert cheese.
34. Give the scientific name of vitamin B<sub>12</sub> and write its structure. How is vitamin B<sub>12</sub> produced by fermentation? What are its uses?

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