

B. Sc. DEGREE EXAMINATION, NOVEMBER 2009  
BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY  
FIFTH SEMESTER

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

SECTION – A

ANSWER ALL QUESTIONS

( 5 x 1 = 5 )

I. Match the following:

(5X1=5)

- |   |           |                          |
|---|-----------|--------------------------|
| 1 | Idiophase | a) Alcoholic beverages   |
| 2 | Biogas    | b) Bakery                |
| 3 | Yeast     | c) Rennin                |
| 4 | Wine      | d) Secondary metabolites |
| 5 | Cheese    | e) Methanogens           |

II. State whether true or false:

( 5 x 1 = 5 )

6. Fluid portion of milk that separates from curd is called Whey
7. Actinomycetes are a rich source of antibiotics
8. Paneer is ripened by *Penicillium roqueforti*
9. Fermentation is an energy efficient process unique to microorganisms
10. Vitamin B<sub>12</sub> is a byproduct of Citric acid production

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

( 3 x 2 = 6 )

	Part	Use
11	_____	_____
12	_____	_____
13	_____	_____

IV.Name the products obtained from the following bacteria.

( 2 x 1 = 2 )

	Source	Name of the product
14	<i>Corynebacterium glutamicum</i>	_____
15	<i>Bacillus subtilis</i>	_____

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

- 16 Upstream processing
- 17 Uses of amylases
- 18 Continuous culture
- 19 Brewers yeast
- 20 Steps involved in the production of Acetic acid (**steps only**)
- 21 Starter
- 22 Antifoaming agents
- 23 Uses of Vitamin A
- 24 Uses of Glutamic acid

**SECTION – B**

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

- 25 List out the steps involved in the preparation of Yoghurt.
- 26 Write brief notes on the production of Vitamin B<sub>12</sub>.
- 27 Discuss the importance of SCP .
- 28 Explain the industrial production of Citric acid
- 29 Mention the preparation of Wine. Add a note on its importance.
- 30 Elaborate the steps involved in the industrial production of Streptomycin

**SECTION – C**

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

- 31 Write an essay on Fermentation with special reference to the importance of production media and the inoculum preparation
- 32 Discuss the preparation of Cheese. Add a note on the types of cheese
- 33 Explain the production of BIOGAS
- 34 Give a detailed account on the importance of yeasts in a Bakery

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