

**M. TECH. (F.T.B.E.) EXAMINATION, 2008**  
(1st Semester)

**ADVANCED MICROBIAL TECHNOLOGY**

Time : Three hours

Full Marks : 100  
(50 marks each part)

*Use a separate Answer-Script for each part.*

PART-I

*Attempt any **three** questions from this part.  
All questions carry equal marks.*

1. Answer any *two* :
  - i) Discuss the benefits of lactic fermented foods. Name the organism which are associated with this fermentation process.
  - ii) Discuss the process for cheddar cheese production mentioning addition and actions of starter and enzymes. Why milk is pasteurised for the preparation of cheese ?
  - iii) Discuss the merits and demerits of slow and quick processed for the preparation of vinegar.
2. Name the raw materials which may be used for the production of alcohol. Why pretreatment of raw materials are necessary ? What is stillage ? How it can be used as

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- a by-product of the industry ? What is Fusel oil ? How its yield can be controlled during fermentation ?
3. Differentiate between antibiotic and antiseptic. Discuss the criteria which are to be optimised for production of antibiotics on commercial scale. How antibiotics are purified?
4. (i) How vit B<sub>12</sub> is produced. How its potency can be determined ?
- (ii) What are the essential components of a fermenter ? How the inoculum to be added in the fermenter is developed for commercial production of biochemicals ?

#### PART-II

*Attempt any **three** questions.  
All questions carry equal marks.*

5. 'Fermented foods are nutritious, digestible and safe' — Justify. Describe the process of preparation of two common fermented foods each from milk and meat.
6. Discuss in detail the different techniques of preservation of microbial culture.
7. How food is contaminated with pathogenic organisms ? How sanitation and hygiene can be maintained in a food processing plant ?

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8. Discuss the following :
- a) Botulism
  - b) Preparation of milk beverage
  - c) Practical rules for good sanitation
  - d) Advantages and disadvantages of microbial insecticides
9. Write short notes on ( any *two* ) :
- a) Afla toxin
  - b) Isolation of pure culture
  - c) Carbon cycle in nature

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