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**FOOD PROCESSING MANAGEMENT/  
FOOD PROCESSING TECHNOLOGY**

**QP : Food Microbiologist**

Paper : FPM/FPT-VC-4036

**( Fermentation Technology )**

*Full Marks : 60*

*Time : 3 hours*

*The figures in the margin indicate full marks  
for the questions*

**1. Answer the following as directed : 1×7=7**

(a) In the fermenter, aeration is done by  
\_\_\_\_\_.

( Fill in the blank )

(b) \_\_\_\_\_ is a fermented dairy product.

( Fill in the blank )

(c) Baffles are incorporated into the fermenter to prevent vortex formation.

( State True or False )

(d) What are antifoams?

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- (e) What do you mean by asepsis?
- (f) What is meant by aspect ratio of a fermenter?
- (g) What is thermophilic microorganism?

2. Write very short answer-type questions :  $2 \times 4 = 8$

- (a) Define downstream processing.
- (b) Classify beer on the basis of cultures used.
- (c) What is titratable acidity? For Dahi, against which acid titratable acidity is checked?
- (d) What is LAB? Classify them with example.

3. Write short answer-type questions (any three) :

$5 \times 3 = 15$

- (a) Write the parameters for an ideal fermenter.
- (b) Define fermentation. Classify fermentation on the basis of end products produced.
- (c) What are the four phases of growth in a fermenter? Explain.

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- (d) Write a short note on submerged fermentation.
- (e) Explain the processing of wine with a suitable flowchart.

4. Write essay-type questions (any three) :  $10 \times 3 = 30$

- (a) Draw a neat labeled diagram of a fermenter and explain its different parts.
- (b) Write short notes on the following :
  - (i) Airlift fermenter
  - (ii) Tower fermenter
- (c) Write short notes on the following fermented products :
  - (i) Sauerkraut
  - (ii) Miso
  - (iii) Tempeh
  - (iv) Dosa
- (d) Define starter culture and mother culture. Which stage is important in fermentation process based on the microorganism growth curve? Write four characteristics of a good culture.
- (e) Describe about inoculum development and microbial growth curve.

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