

Total number of printed pages-4

53 (FPT 404) FDMB

2019

FOOD MICROBIOLOGY

Paper : FPT 404

Full Marks : 100

Time : Three hours



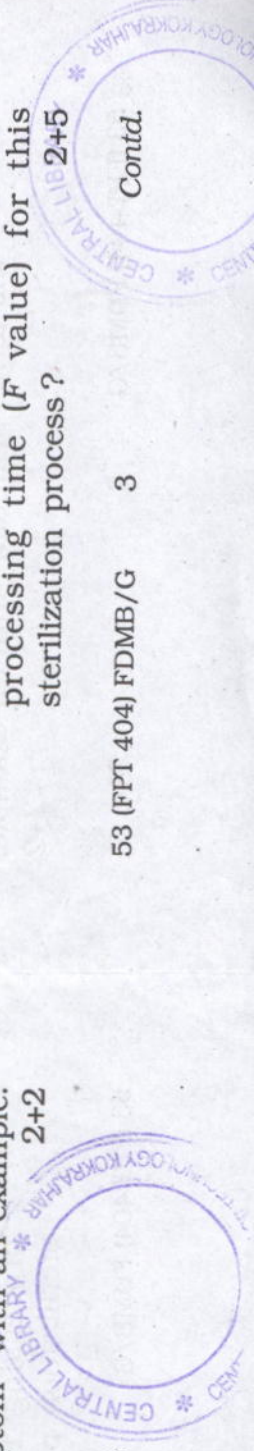
The figures in the margin indicate full marks for the questions.

Answer **any five** questions out of **six**.

1. (a) Define the following terminologies with two examples for each : 6
 - (i) Intoxication
 - (ii) Infection
 - (iii) Toxicoinfection.
- (b) Briefly describe the homolactic fermentation, and give example of a fermented food, and a starter bacteria responsible for such fermentation. 8+2

Contd.

- (c) What is Botulism ? By what other name did this disease used to be known ?
2+1
- (d) Who developed the process of food sterilization in metal cans ?
1
2. (a) How do the following factors affect microbial growth ?
(i) Water activity
(ii) pH
(iii) Radiation.
10
- (b) Elaborate structure of bacterial DNA with a schematic diagram.
10
3. (a) Briefly elaborate on Sauerkraut fermentation. What is Cheddaring ?
8+2
- (b) List four major flavor compounds present in many fermented dairy products. Explain how diacetyl is produced during fermentation.
2+4
- (c) Define Foodborne Outbreaks. Explain the term "symptom" with an example.
2+2
4. Write elaborate description on **any two** of the following foodborne diseases :
2×10
- (i) Aflatoxicosis
(ii) Staphylococcal intoxication
(iii) Salmonellosis.
5. (a) Draw a generic flow diagram for Sausage processing. Explain the fermentation profile in sausage.
7+3
- (b) Define D-value. Derive the mathematical expression of D-value.
2+8
6. (a) Explain what are enrichment medium and differential medium with examples.
6
- (b) What is thermal processing time (F value) ? A spoilage bacteria has a D value of 1.35 at 121°C. In a canned food, 10 cells of the bacteria is the initial population. A spoilage probability of 1/1,00,000 is the target of the thermal processing. What is the thermal processing time (F value) for this sterilization process ?
2+5



(c) Elaborate on **any two** of the following :

2×3=5

- (i) Malolactic fermentation in wine
- (ii) Acetic acid fermentation in vinegar.

