

(6 pages)

Reg. No. : .....

Code No. : 30406 E Sub. Code : EMMI 62

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Microbiology – Core

Major – FOOD, DIARY AND PROBIOTIC  
MICROBIOLOGY

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which mold is commonly used for the production of citric acid and gluconic acid?
  - (a) *Rhizopus nigricans*
  - (b) *Aspergillus niger*
  - (c) *Penicillium chrysogenum*
  - (d) *Aspergillus terreus*

2. What is the primary purpose of drying/dehydration in food processing?
  - (a) Increasing nutritional value
  - (b) Reducing water activity ( $a_w$ ) to prevent microbial growth
  - (c) Enhancing colour
  - (d) Increasing moisture content
3. Which *Shigella* species is known for producing the Shiga toxin?
  - (a) *S. sonnei*
  - (b) *S. flexneri*
  - (c) *S. dysenteriae*
  - (d) *S. boydii*
4. Which of the following is NOT a high-risk group for developing severe listeriosis?
  - (a) Pregnant women.
  - (b) Newborns.
  - (c) Immunocompromised patients.
  - (d) Healthy adolescent males.

5. Biofilms in food processing environments are highly resistant to which of the following?
- Standard cleaning and disinfection processes
  - Freezing
  - UV light
  - Vacuum packaging
6. Which of the following bacteria causes ropiness in milk?
- Leuconostoc* sp
  - Micrococcus* sp
  - Alcaligenes viscolactis*.
  - Salmonella* sp.
7. What is the typical alcoholic content of a 24-hour fermented kefir?
- |               |          |
|---------------|----------|
| (a) 0%        | (b) 0.1% |
| (c) 0.8% - 1% | (d) 5%   |
8. What is the primary microorganism used to initiate miso fermentation?
- Rhizopus oligosporus*
  - Aspergillus oryzae*
  - Saccharomyces cerevisiae*
  - Lactobacillus acidophilus*
9. What is the generally accepted legal definition of probiotics?
- Live microorganisms that provide health benefits when consumed.
  - Killed microorganisms that boost immunity.
  - Chemical compounds that destroy gut bacteria.
  - Antibiotic-resistant bacteria.
10. Which of the following is crucial for the stability of probiotics in probiotic supplements?
- High moisture content
  - Proper encapsulation
  - Exposure to air
  - Room temperature storage

PART B — (5 × 5 = 25 marks)

Answer ALL questions, by choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) Comment on asepsis and significance?

Or

- (b) Reveal the features of food additives.

12. (a) Classify microbes based on food threats.

Or

(b) Give an account on plant sanitation.

13. (a) Advertise the microbiology of milk.

Or

(b) Explain the principle of refrigeration in safeguarding foods.

14. (a) What do you know about pickle microbiology?

Or

(b) Write an account on vinegar.

15. (a) Cite the properties of probiotics.

Or

(b) Record the significance of bacteriocin.

**PART C — (5 × 8 = 40 marks)**

Answer ALL questions, by choosing either (a) or (b).  
Each answer should not exceed 600 words.

16. (a) Discuss in detail about bacterial association with foods.

Or

(b) Unzip the principle, advantages and limitations of low temperature preservation methods used for food safety.

17. (a) Highlight the importance of BIS in food quality management.

Or

(b) Document the importance of mycotoxins.

18. (a) Write in detail about pasteurization.

Or

(b) Exhibit the different routes of contamination and types of spoilage in dairy products.

19. (a) Depict the types and significance of cheese.

Or

(b) GMO — Are they mercy or menace ? — Discuss in detail.

20. (a) What do you know about probiotics?

Or

(b) Discuss in detail about prebiotics and their role in health management.