(7 pages) Reg. No. : .....

Code No. : 10559 E **Sub. Code : CMMI 61**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2024.

Sixth Semester

Microbiology – Core

FOOD AND DAIRY MICROBIOLOGY

(For those who joined in July 2021-2022 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which micro organism is commonly used in the production of yogurt?

   (a) *Streptococcus thermophilus*

   (b) *Vibrio cholerae*

   (c) *Clostridium difficile*

   (d) *Pseudomonas* sp.

2. Which of the following statements about FDA is true?

   (a) The FDA regulates only food products

   (b) The FDA is responsible for regulating medical practice standards

   (c) The FDA conducts research on the safety and effectiveness of consumer products.

   (d) The FDA does not regulate cosmetics

3. Which of the following statement about freezing is true?

   (a) Freezing kills all micro organisms present in the food

   (b) Freezing slows down but does not completely stop enzyme activity in food

   (c) Freezing is only suitable for preserving fruits and vegetables

   (d) Freezing is relatively slow method of food preservation compared to canning

4. Piden, a type of fermented food is traditionally consumed in which country?

   (a) Japan (b) China

   (c) Korea (d) Turkey

5. Which of the following preservatives is commonly used in cereal products to prevent microbial spoilage?

(a) Salt (b) Vinegar

(c) Sodium benzoate (d) Citric acid

6. Which bacterium is commonly associated with causing food poisoning from contaminated poultry?

(a) Salmonella (b) Listeria

(c) *E.coli* (d) Campylobacter

7. Which dairy product is made through the fermentation of milk with both bacteria and yeast?

(a) Buttermilk (b) Cheese

(c) Yogurt (d) Kefir

8. The causative agent of Q fever is ————?

(a) *Coxiella burnetti*

(b) *Corynebacterium* sp.

(c) *Streptococcus* sp.

(d) *Chlamydia trachomatis*

9. What is the characteristic appearance of acid fast bacteria after staining with Alizarin red in the Alizarin alcohol test?

(a) Pink or red (b) Purple or blue

(c) Green (d) Colorless

10. Which chemical substrate is commonly used in the Phosphatase test to detect alkaline Phosphatase activity?

(a) Lactose

(b) Nitro phenyl phosphate

(c) Casein

(d) Glucose

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the significance of yeast in food microbiology.

Or

(b) Describe the objectives of the FSSAI and its role in regulating food safety standards in India.

12. (a) Define food additives and explain their role in food preservation.

Or

(b) Compare and contrast the fermentation process used in making Minchin and fermented coffee, focusing on their microbial cultures and final flavor profiles.

13. (a) List out the spoilage organisms of cereals and cereal products and their preservation methods.

Or

(b) Give short notes on

(i) Aflatoxin

(ii) Trichinosis

14. (a) Discuss the role of micro organisms in the fermentation process of cheese.

Or

(b) Give brief account on Foot and mouth disease.

15. (a) Explain the principle behind the Alizarin alcohol test. Write the procedure.

Or

(b) Write short notes on the following

(i) Shake culture method

(ii) Milk rejection test

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the role of molds in food microbiology, highlighting their significance in food spoilage and production.

Or

(b) Explain the principles and benefits of implementing a Hazard Analysis and Critical Control Points (HACCP) system in food production.

17. (a) Explain the principles behind high – temperature preservation methods and discuss the advantage and limitations of high – temperature preservation techniques.

Or

(b) Outline the essential sanitation procedures required to maintain a clean and hygienic food production environment. Add note on critical control points and their significance in ensuring food safety and sanitation.

18. (a) Compare and contrast the preservation techniques used for fruits and vegetables include examples and discuss their effectiveness in prolonging shelf life.

Or

(b) Discuss the source, symptoms and preventive measures of Staphylococcus food poisoning. Include example of food commonly contaminated with *Staph.aureus*.

19. (a) Describe in detail the sources of micro organisms present in raw milk.

Or

(b) Give a brief account on the following milk borne bacterial diseases.

(i) Tuberculosis

(ii) Q fever.

20. (a) Explain the direct microscopic count method used in dairy microbiology to assess the microbial load in milk.

Or

(b) Write short note on the following:

(i) Phosphatase milk test

(ii) Burri smear test.
