P. P. SAVANI UNIVERSITY

Fifth Semester of B.Sc. Examination
December-2021
SSMB3070-Food and Dairy Microbiology-I

07.12.2021, Tuesday Time: 09:00 a.m. to 11:30 a.m. Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

Section-I (Total Marks - 30)

Q.1 Short Questions [10]

1.1 Objectives [05]

1.1a Which of the following is the intrinsic factor for the growth of the microorganisms?

- **A** pH
- **B** Moisture
- **C** Oxidation-Reduction potential
- **D** All of the above

1.1b A yellow color in the creamy layer of milk may be caused by

- **A** *Pseudomonads synxantha*
- **B** *Pseudomonads syncyanae*
- **C** Both
- **D** S. marcescens

1.1c Primary methods to prevent food spoilage do NOT include

- **A** Sugar
- **B** Radiation
- **C** Exposure
- **D** Heat

1.1d Which of the following plays important role in determining predominant spoilage in foods?

- **A** Food types
- **B** Food environment
- **C** Microbial types
- **D** All of the above

1.1e The primary protein in milk is

- **A** Casein
- **B** Lysine
- **C** Tryptophan
- **D** Valine

1.1f HTST stands for
- A High temperature slow treatment
- B High temperature short time
- C High time slow treatment
- D High thermal slow time

1.1g Louis Pasteur established the modern era of food microbiology by showing that microbes cause _____ Spoilage.
- A Beer
- B Wine
- C Juice
- D Milk

1.1h Which of the following is an example of food borne intoxicants?
- A Salmonellosis
- B Botulism
- C Yersiniosis
- D None

1.1i Genus Yersinia is named after the French bacteriologist.
- A Edward yersin
- B Alexander yersin
- C Thomas yersin
- D Allen yersin

1.1j Which of the following constituents of egg provides protection against spoilage?
- A Allicin
- B Lysozyme
- C Lactoperoxidase
- D All of the above

1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks) [05]

1.2a What are natural Flora of foods?

1.2b What do you mean by classification of foods based on stability?

1.2c Enlist any two microbes causing spoilage of milk.

1.2d Define: Spoilage of foods.

1.2e Environmental factors may affect spoilage of foods. True/False.

Q.2 Short Notes (Attempt any two) [06]

A Differentiate: Intrinsic and Extrinsic factors affecting microbial growth.

B Describe sequence of events taking place during food spoilage.

C Briefly explain spoilage of raw meat.

Q.3 Explain in detail (Attempt any two) [14]

A What is spoilage? Explain in detail spoilage of milk and canned foods.

B Explain intrinsic factors influencing microbial spoilage.

C Describe various habitats as sources of microorganisms in food.

Section-II (Total Marks - 30)

Q.1 Short Questions

1.1 Objectives [10]

1.1a Which is NOT an example of thermal preservation process [05]

A Blanching
B Dry Freezing
C Boiling
D Sterilization

1.1b Water activity can act as _____.

A An extrinsic factor
B A processing factor
C An intrinsic factor determining the likelihood of microbial proliferation
D All of the above

1.1c What amount of oxygen present food helps to reduce food spoilage?

A Less oxygen doesn't allow microbes to live on food
B No oxygen kills microbes that cause food spoilage
C Less oxygen prevents microorganisms from growing and spreading
D Oxygen is important for spoilage

1.1d Shredded cabbage is the starting product for which of the following fermented food?

A Sauerkraut
B Pickles
C Green olives
D Sausage

1.1e Spoilage in food because of microbial activity can be prevented or delayed by

A Prohibiting the entry of micro-organisms in food
B Physical removal of micro-organisms
C Hindering the activity of micro-organisms
D All of above

1.1f The principal microorganism for yogurt is _____

A *Streptococcus thermophilus*
B *Lactobacillus acidophilus*
C *Streptococcus lactis*
D *Leuconostoc citrovorum*

1.1g Pasteurization is the heat treatment designed primarily to kill

A Vegetable forms of microorganisms
B All form of microorganisms
C Spore
D None of above

1.1h NaCl can act _____.

A Transporting nutrients
B Antagonist at optimal concentrations
C Synergistically if added in excess of optimum level
D Both a and b

1.1i Bacterial cell grown on hydrocarbon wastes from the petroleum industry are a source of _____

A Carbohydrates
B Fats
C Proteins
D Vitamins

1.1j Which alga can be used as food for the human being?

A *Chlorella*
B *Polysiphonia*
C *Ulothrix*
D *Spirogyra*

1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks) [05]

1.2a What is the temperature range for slow freezing?

1.2b *Lactobacillus, Streptococcus* and *Leuconostoc* are the lactic acid producing bacteria. True or false?

1.2c Peptides and _____ act as flavour precursors.

1.2d What is mesophillic starter culture?

1.2e State two examples of Class II preservatives.

Q.2 Short Notes (Attempt any two) [06]

A Define dairy starter culture and classify them on the basis of biochemical activities.

B What are probiotics and why are they important?

C Describe any three microorganisms used in the fermentation of dairy products.

Q.3 Explain in detail (Attempt any two) [14]

A State the role of bacteria, fungi, molds, yeasts, protozoa, algae, and viruses in causing food spoilage.

B What are the factors affecting food spoilage?

C Explain in detail the common methods of food preservation?