

2122

B.E. (Bio-Technology) Seventh Semester

BIO-712: Food Biotechnology

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following briefly:-

- a) What is the relationship between relative humidity and water activity?
- b) What are shelf stable products?
- c) Based on the pH required for growth, how are microbes classified.
- d) Name the Extrinsic factors which affect the growth of a microorganism in food.
- e) Explain HTST and LTLH.
- f) Give general characteristics of molds.
- g) What is the structure of Hepatitis A virus?
- h) What is vacuum drying?
- i) What is the major advantage of microwave cooking over conventional cooking?
- j) What is blanching? (10x1)

UNIT - I

II. a) Define redox potential and discuss how it influences microbial growth in a food. How can microorganisms be grouped on the basis of their growth capabilities at different redox potentials and oxygen availabilities?

b) Write an account on spoilage of eggs by microorganisms. (2x5)

III. Write briefly on any four of following genera:-

- a) *Pseudomonas*
- b) *Escherichia*
- c) *Penicillium*
- d) *Aspergillus*
- e) *Saccharomyces*

(10)

P.T.O.

(2)

- IV. a) What are the benefits and limitations of modified atmosphere packaging of food products?
b) Discuss the mechanism of microbial inactivation by radiation and freezing. (2x5)

UNIT - II

- V. a) What are the raw materials used for beer production? List out the important steps carried out for beer production.
b) What are the sources of microorganisms for production of SCP? (7,3)
- VI. Give a detailed account on biochemical and cultural characteristics of *Staphylococcus aureus*. (10)
- VII. a) Give an overview on various mycotoxins.
b) Discuss the pathogenesis of Amebiasis and Giardiasis. (3,7)

x-x-x