Printed Pages : 2 **EBT602**

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2445 **Roll No.** | | | | | | | | | | |

B.Tech.

(SEMESTER. VI) THEORY EXAMINATION, 2012-13

FOOD BIOTECHNOLOGY

Time : 3 Hours] ***[Total Marks : 100***

SECTION – A

10 × 2 = 20

1. Attempt **all** question parts :
   (a) What are the sources of microorganisms in fresh meats ?
   (b) What is hurdle technology and principles hurdles used in food preservation ?
   (c) What are the factors affecting the viability of probiotics in foods ?
   (d) What is single cell protein and substrates used for its production ?
   (e) Explain the effects of UHT milk processing.
   (f) How PCR could be helpful in detecting food borne pathogens ?
   (g) Name the source of radiation and list down their advantages.
   (h) Write short notes on Pasteurization.
   (i) Name some indicators used to evaluate efficiency of food preservation.
   (j) Explain thermal death time, D and Z values and its implication.

SECTION – B

2. Attempt any **three** question parts : **10 × 3 = 30**
   (a) What are the factors responsible for metabolic injury of microorganisms ? How do microorganisms overcome metabolic injury ?
   (b) Explain in detail about the criteria used in the classification of microorganisms.
   (c) Explain the process of high gravity brewing and its effect on end product.
   (d) What are the mechanisms involved in the action of ionizing radiation in food preservation ?
   (e) Illustrate drying characteristics of food materials using drying curve.

SECTION – C

Attempt **all** questions : **10 × 5 = 50**

3. Attempt any **two** parts : **5 × 2 = 10**

   (a) Explain in detail about the various extrinsic parameters of food affecting microbial growth.

   (b) What are the general principles of food preservation ?

   (c) Elaborate principle and unit operations involved in the freeze drying with flow chart.

4. Attempt any **one** part : **10 × 1 = 10**

   (a) What are the different types of Starter culture and list their desirable properties. Also list the health benefits of Lactic acid bacteria. (LAB)

   (b) Explain in detail the process involved in the production of Wine with flow chart.

5. Attempt any **one** part : **10 × 1 = 10**

   (a) Explain the various steps involved in the cheese production. What is the role of starter culture and its mechanism in cheese manufacturing ?

   (b) Explain in detail the traditional methods employed for microbial examination of surfaces.

6. Attempt any **one** part : **10 × 1 = 10**

   (a) What are the factors considered for choosing the radiation source ? Define absorbed dose and express it by equation. What are the facilities required for using gamma rays in food irradiation ?

   (b) Explain in brief about the Radappertization, Radicidation, and Radurization of Foods. How food constituents are affected by food irradiation ? Name the detection methods available to detect radiated foods.

7. Attempt any **two** parts : **5 × 2 = 10**

   (a) Explain in detail about the various methods of thermal milk processing.

   (b) What are the factors responsible for metabolic injury of microorganisms ? How do microorganisms overcome metabolic injury ?

   (c) What are the factors responsible for storage stability resulting from the specific preservation method ?