

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012

Subject code: 141402

Date: 23/05/2012

Subject Name: Food and Industrial Microbiology

Time: 10:30 am – 01:00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Match the following : **07**

<i>Clostridium botulinum</i>	72 °C for 15 sec
<i>Penicillium digitatum</i>	121 °C for 15 min
<i>Aspergillus repens</i>	Ropiness in milk
<i>Rhizopus stolonifer</i>	Blue mold Rot
<i>Alcaligenus viscolactis</i>	Botulism(Food Intoxication)
HTST Pasteurization	Mold button in SCM
Sterilization	Spoilage of bread

(b) Explain in detail use of drying for food preservation. **07**

Q.2 (a) What is food poisoning? Define and explain bacterial food infection and bacterial food intoxication by any two bacteria. **07**

(b) Explain technique for isolation and preservation methods for industrial important microorganisms. **07**

OR

(b) What are ideal characteristics of medium for fermentation processes? Write role of ingredients used in fermentation. **07**

Q.3 (a) What is application of radiation in food preservation? Discuss its effect on quality of food with legal requirement. **07**

(b) Write short note on Single cell protein. **03**

(c) What are different categories of inoculums, discuss any one method for spore development for inoculation **04**

OR

Q.3 (a) Explain vinegar (Acetic acid) production by fermentation in detail. **07**

(b) Enlist major types of fermenters and discuss continuous stirred tank fermenter. **07**

Q.4 (a) List characteristics of an ideal antimicrobial preservative. Explain Propionate, Sorbate and Benzoate as food preservative. **07**

(b) List various types of spoilage organisms in milk with their spoilage condition. **03**

(c) Explain recovery process of citric acid from fermentation broth **04**

OR

Q.4 (a) Explain spoilage of canned food by mesophilic spore forming bacteria and non spore forming bacteria. **07**

(b) Explain parameters tested in secondary screening microorganism. **03**

(c) Discuss filtration technique and factors affecting on it in separation of biomass from fermentation broth **04**

- Q.5** (a) What are essential general features of an ideal fermenter? **06**
(b) Effect of Quick freezing and slow freezing on microorganisms. **04**
(c) Brief IMF along with techniques used to change a_w . **04**
- OR**
- Q.5** (a) Discuss processing and role of each components in the beer fermentation **06**
(b) Brief about 12 D concept in canned food preservation. **04**
(c) List two bacterial and two yeast fermented food along with organisms used for it. **04**
