



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.TECH (BT-NEW)/SEM-7/BT-702/2010-11**

**2010-11**

**FOOD BIOTECHNOLOGY**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *ten* of the following :

10 × 1 = 10

i) Which has a long self life amongst the following ?

- |            |            |
|------------|------------|
| a) Cereals | b) Poultry |
| c) Milk    | d) Wine.   |

ii) At lower pH (<4) microorganism predominates are

- |             |               |
|-------------|---------------|
| a) bacteria | b) yeasts     |
| c) molds    | d) parasites. |

iii) Xerophiles can grow at

- |                              |
|------------------------------|
| a) higher salt concentration |
| b) higher water activity     |
| c) lower salt concentration  |
| d) lower water activity.     |



- iv) Golden rice replenishes the deficiency of
- a) Vitamin A
  - b) Iron
  - c) both a and b
  - d) None of these.
- v) Lactic acid and propionic acid fermentation is observed during the ripening of
- a) Cheddar cheese                      b) Swiss cheese
  - c) Brick cheese                         d) Camembert cheese.
- vi) The thermally stable amylase is obtained from
- a) Bacillus subtilis
  - b) Aspergillus oryzae
  - c) Bacillus licheniformis
  - d) all of these.
- vii) Plumbism is caused by increased level of
- a) Arsenic                                      b) Cadmium
  - c) Lead                                         d) Iron.



viii) Night Blindness is caused due to deficiency of

- a) Vitamin C
- b) Vitamin A
- c) Vitamin D
- d) Vitamin B<sub>12</sub>.

ix) Aflatoxin was discovered in

- a) Penicillium
- b) Aspergillus
- c) Puccinia
- d) Rhizopus.

x) Stale fishy odour is due to

- a) Histamine
- b) Spermidine
- c) Trimethyl amine
- d) trimethyl oxide.



- xi) Ropiness in milk is caused by
- a) Slime production by *Alcaligenes viscolactis*
  - b) Rancidity of butter fat
  - c) Proteolysis by *Pseudomonas*
  - d) Odour production by *P. mephytica*
- xii) Swiss cheese is
- a) red cheese
  - d) blue cheese
  - c) hard cheese with large holes
  - d) Mold ripened cheese.

### GROUP – B

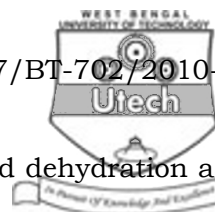
#### ( Short Answer Type Questions )

Answer any *three* of the following.

$$3 \times 5 = 15$$

2. What are D value and Z value ? Explain how they are calculated graphically ? How these two values are related to food preservation ?

$$2 + 2 + 1$$



3. Give a comparative account of canning and dehydration as a method of food preservation. 5
4. What are the advantages of production of Single Cell Protein (SCP) ? Write some commonly used micro-organisms and corresponding substrates utilized for the production of SCP. 2 + 3
5. Why is malo-lactate fermentation often followed in the production of wine ? What are the different bacterial species involved in the process ? 3 + 2
6. What are Rad-Appertization, Appertization, radurization, radicidation and picowaved ? 5

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following. 3 × 15 = 45

7. a) Elucidate the importance of starter culture in cheese fermentation.
- b) What are composition of starter culture for Swiss cheese and Blue cheese ?
- c) Discuss nutritional value and health benefits of yogurt.

4 + 6 + 5



8. a) Give an account of genetically modified crops that contribute to the nutritional improvement of daily diet.
- b) What are the possible ill consequences of cultivating genetically modified crops ?
- c) Explain nutritional importance of mushroom.

6 + 5 + 4

9. Write short notes on any three of the following : 3 × 5

- a) Staphylococcal food poisoning
- b) Microbial flora of meat
- c) Spoilage of Sauerkraut
- d) Mycotoxins.

10. Name some commonly used food preservative. Write the structural formula of any two. How does it prevent the growth of microbes in food ?

Explain why chlorophyll turns brown during food processing ?

How can the colour be preserved in processed food ?

2 + 2 + 3 + 4 + 4



11. Elaborate with example the role of lactic acid fermenting bacteria in different stages of sauerkraut fermentation. What is the role of salt concentration in this fermentation ? Write the production process of cucumber pickle. What is dill pickle ?

6 + 5 + 3 + 1

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