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 : $10 \times 1 = 10$

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_{12}.

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 Alcaligens 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. $3 \times 15 = 45$

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 cholorophyll 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