FOOD BIOTECHNOLOGY
(BIOT 3131)

Time Allotted : 3 hrs **Full Marks : 70**

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and any 5 (five) from Group B to E, taking at least one from each group.

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

Group – A
(Multiple Choice Type Questions)

1. Choose the correct alternative for the following: **10 × 1 = 10**

(i) Pressure temperature requirement for sterilization in autoclave
(a) 15 psi at 121°C for 15 (b) 10 psi at 100°C for 15
(c) 20 psi at 121°C for 20 (d) none of these

(ii) Which of the following is responsible for fishy odour?
(a) Putrecsine (b) Cadaverine
(c) Tri-methyl amine (d) none of these

(iii) Anthocyanins are
(a) isoprenoids (b) alkaloids
(c) flavonoids (d) none of these

(iv) Naringins are present in
(a) citrus fruits (b) leafy vegetables
(c) tree (d) sea weeds

(v) Burnt flavour in milk is caused by
(a) Overheating (b) overpasteurization
(c) Spoilage by Streptococcus lactis (d) caramelization

(vi) Enterotoxins are produced by
(a) A. flavus (b) A. oryzae
(c) A. niger (d) S.typhimurium

(vii) Epoxide is a
(a) antioxidant (b) fat replacer
(c) preservative (d) artificial sweetener

(viii) Cyclic ethers are added in food as
(a) antioxidant (b) emulsifier
(c) preservative (d) fat replacer

(ix) Acrylamide is produced during the production of
(a) Cheese (b) Beer
(c) Bread (d) none of these

(x) Scalding is a
(a) Pretreatment of food before freezing (b) Processof sterilization
(c) Boiling of food (d) Pasteurization

Group – B

2. (a) Define:
(i) Water activity
(ii) Microbial rancidity
(iii) TDT
(iv) Cold point
(v) Canister
(vi) Decimal reduction time. [(CO 1)(Understand, LOCQ)]

(b) Why pretreatments like sulphurization, blanching or scalding during food preservation are important? [(CO 2)(Analyze, IOCQ)

6 + 6 = 12

3. (a) What are the aerobic and anaerobic spoilage of meat?
[(CO 1)(Understand, LOCQ)])

(b) Describe:
(i) One chemical method and
(ii) One physical method for detecting them. [(CO 1) (Apply, IOCQ)]

(2 + 4) + (3 + 3) = 12

Group – C

4. Justify the use of mushroom as SCP. [(CO 6) (Justify, HOCQ)]
Describe schematically the production process of white button mushroom.
[(CO 6) (Describe, IOCQ)]

(2 × 6) = 12

5. (a) Name two new food sources for future use. Illustrate with a flow chart the production process of any one GM crop. [(CO 6) (Understand, HOCQ)

(b) Write some commonly used microorganisms and their corresponding substrates utilized for the production of SCP. [(CO 6) (Understand, IOCQ)]

4 + 8 = 12

Group – D

6. (a) Discuss the role of lactase in dairy fermentation. [(CO3) (Discuss, IOCQ)]

(b) What is gluten? Why is it important? [(CO3) (Remember /Analyze, LOCQ/HOCQ)]

(c) What is chillproofing and how it is eliminated? [(CO3) (Understand, LOCQ)]

4 + 4 + 4 = 12

7. (a) Why regiospecific lipase is used in oil industries? [(CO 5) (Justify, HOCQ)]

(b) What is lactose intolerance? [(CO 5) (Understand, LOCQ)]

(c) What is HFCS and how it is prepared? [(CO 5) (Understand, LOCQ)]

3 + 3 + 6 = 12

Group – E

8. (a) Name some commonly used food preservatives. [(CO 5) (Remember, LOCQ)]

(b) How food preservatives prevent the growth of microbes in food? [(CO 5) (Understand. LOCQ)]

(c) What is the function of allium present in onion. [(CO 5), (Application, IOCQ)]

4 + 5 + 3 = 12

9. (a) Briefly explain the mode of action of Ergot alkaloids. [(CO 4) (Explain, LOCQ)]

(b) What are chelating agents and write their mode of action. [(CO 5) (Remember, IOCQ)]

(c) Why green vegetables change their colour during storage? [(CO 5) (Justify, HOCQ)]

2 + 7 + 3 = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	30%	50%	20%

Course Outcome (CO):

After completing this course, students will be able to:

CO1: Apply different food preservation techniques
CO2: Know different food processing techniques
CO3: Analyse different types of processed food
CO4: Application of enzymes in food industry
CO5: Detect adulteration and toxic food components
CO6: Gain knowledge of different functional food and GMO

Department & Section	Submission Link
BT	https://classroom.google.com/c/NDMwMDM5NjczODc0/a/NDU4NzM1ODAzNDI1/details