

**B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING FOURTH YEAR
SECOND SEMESTER EXAM – 2025**

Subject : FOOD BIOTECHNOLOGY

Time : 3 hr

Full Marks : 100

Part I (50 marks)

Use Separate Answer scripts for each part

Answer any five questions from the following:

1. What is the use of biotechnology in the field of agriculture and food production- explain with example. What is the difference between bioremediation and biocontrol? 6+4=10
2. How genetic modification is applied for modification of edible oil and environmental stress tolerance? 5+5=10
3. Mention the tools needed, their function and steps for Recombinant DNA Technology. 2.5+2.5+5=10
4. What is Single Cell Protein? Mention the safety factors related to it. What are the advantages and disadvantages of yeast cell over bacteria cells for Single Cell Protein production? 1+4+5=10
5. How genetic modification has been made in the following products:
 - i. Cold tolerant tomatoes
 - ii. Genetically modified corn
6. What are the safety concerns of GM foods? Mention any five advantages of GM foods. 5+5=10
7. How the following advances modify fermented foods: 5+5=10
 - i. Application of thermal and non thermal technologies
 - ii. Nanotechnology
8. Write short note on any one 10
 - i. Fermentative production of a legume based fermented food
 - ii. Fermentative production of a fruit based fermented food
 - iii. Use of quantum dot for detection of pathogen

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FOURTH YEAR SECOND SEMESTER EXAM 2025**

FOOD BIOTECHNOLOGY

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Time: 3 hrs

Part – II (50 marks)

Group-A

Answer any one question

1×10 = 10

1. Write short note on trans-esterification process. Write the applications of modified proteins in food industries. 5+5 = 10
2. Briefly describe the safety and quality evaluation processes for dahi.

Group-B

Answer any two questions

2×20 = 40

3. Write the importance and applications of modified starch. Describe the different starch modification processes with chart. Elaborate biological starch modification process. 7+6+7 = 20
4. Write the applications of modified fats in food and other industries. Briefly describe different methods for fat modification. 8+12 = 20
5. Briefly describe high fructose corn syrup production method from starchy materials. What are the different types of HFCS? Write the applications of HFCS. 12+4+4 = 20