



B.TECH DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Fifth Semester

BIOTECHNOLOGY

U18BTE0002: Food Process Engineering

COURSE OUTCOMES

- CO1:** Apply and analyze the pre-cleaning techniques in food processing
CO2: Apply different types of high temperature processing operations
CO3: Illustrate different drying and dehydration techniques
CO4: Categorize several low temperature processing and preservation techniques
CO5: Classify various post -processing operations
CO6: Apply and analyse various packaging operations

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

- | | | |
|--|-----|-------------------|
| 1. Why magnetic separator is used in industries? | CO1 | [K ₃] |
| 2. What are the basic principles of food processing? | CO1 | [K ₂] |
| 3. List the factors that affect pasteurization process | CO2 | [K ₂] |
| 4. Why is blanching used? | CO2 | [K ₁] |
| 5. Distinguish the drying and evaporation | CO3 | [K ₄] |
| 6. Differentiate between the dehydration and rehydration | CO3 | [K ₃] |
| 7. Provide the basic elements of mechanical refrigerator | CO4 | [K ₂] |
| 8. Enlist the beneficial effects of controlled atmosphere storage | CO4 | [K ₂] |
| 9. What is the coating materials used to enrobe foods? | CO5 | [K ₂] |
| 10. Give the role of nitrogen gas in modified atmosphere packaging | CO6 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

- | | | | |
|---|----|-----|-------------------|
| 11. Write a detailed note on various methods of peeling with neat sketch, | 16 | CO1 | [K ₂] |
| 12. The process serves a variety of functions, one of the main ones being to destroy enzymatic activity in vegetables and some fruits, prior to further processing by heat. Find the process and explain in detail with illustration. | 16 | CO2 | [K ₃] |

13.	Pasteurization is a process of food preservation in which packaged and non-packaged foods (such as milk and fruit juices) are treated with mild heat to eliminate pathogen and extend shelf-life. Justify the statement in detail.	16	CO2	[K ₄]
14.	a) Discuss the spray dryer with neat sketch.	8	CO3	[K ₂]
	b) Sketch the freeze dryer and provide their advantages and disadvantages	8	CO3	[K ₃]
15.	Enumerate the controlled atmospheric and modified atmospheric packaging for extend shelf- life of a food product.	16	CO5	[K ₂]
16.	Elaborate the filling and sealing of food products during the packaging system.	16	CO6	[K ₂]
