



B.TECH DEGREE EXAMINATIONS: APRIL /MAY 2024

(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)

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|---|-----|-------------------|
| 1. What is the working mechanism of air screen cleaner? | CO1 | [K ₂] |
| 2. Why are food processed? | CO1 | [K ₂] |
| 3. Name the enzymes that causes a loss of eating and nutritional qualities in vegetables and fruits | CO2 | [K ₂] |
| 4. Sketch the plate heat exchanger used for pasteurization of milk | CO2 | [K ₃] |
| 5. Differentiate between dehydration and rehydration of food | CO3 | [K ₃] |
| 6. Define baking | CO3 | [K ₁] |
| 7. What are the freezing methods? | CO4 | [K ₂] |
| 8. Distinguish the controlled atmosphere and modified atmosphere storage | CO4 | [K ₃] |
| 9. List the coating materials that are used to enrobe foods? | CO5 | [K ₂] |
| 10. What is the role of oxygen used in MAP? | CO6 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

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|--|----|-----|-------------------|
| 11. a) The peeling process is a vital sector of the fruit and vegetable processing industry. Justify the statement with methods in detail. | 16 | CO1 | [K ₃] |
| 12. a) Explain the pasteurization of milk with neat sketch. | 12 | CO2 | [K ₂] |

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|-----|----|---|----|-----|-------------------|
| | b) | Provide the advantages and limitations of conventional steam blancher and hot water blancher. | 4 | CO2 | [K ₂] |
| 13. | a) | Write a detailed note on extrusion processing steps and types of extruder with neat sketch. | 16 | CO2 | [K ₃] |
| 14. | a) | Discuss the drum dryer and freeze dryer operation with their advantages and disadvantages. | 16 | CO3 | [K ₃] |
| 15. | a) | Explain the refrigeration and freezing methods of food storage. | 16 | CO4 | [K ₂] |
| 16. | a) | What is the principle of enrobing process? | 4 | CO5 | [K ₂] |
| | b) | Illustrate the controlled atmospheric and modified atmospheric packaging system to increase the shelf- life of food products. | 12 | CO6 | [K ₃] |
