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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech III Year II Semester Supplementary Examinations February-2022****DAIRY AND FOOD ENGINEERING**

(Agricultural Engineering)

Time: 3 hours

Max. Marks: 60

**PART-A**

(Answer all the Questions 5 x 2 = 10 Marks)

- |   |          |   |    |
|---|----------|---|----|
| 1 | <b>a</b> | Define food spoilage and deterioration. | 2M |
|   | <b>b</b> | Define thermal death time (D-Value).    | 2M |
|   | <b>c</b> | Define homogenization.                  | 2M |
|   | <b>d</b> | Define evaporation.                     | 2M |
|   | <b>e</b> | Define freezing.                        | 2M |

**PART-B**

(Answer all Five Units 5 x 10 = 50 Marks)

**UNIT-I**

- |   |          |  |    |
|---|----------|--|----|
| 2 | <b>a</b> | Define and explain the sampling for food testing.                    | 5M |
|   | <b>b</b> | Explain the effect pH and water content on growth of microorganisms. | 5M |

**OR**

- |   |          |   |    |
|---|----------|---|----|
| 3 | <b>a</b> | If the Lactometer reading becomes 31.0 at 66°F, what is the corrected specific gravity of milk? | 5M |
|   | <b>b</b> | List out the physical, chemical and biological methods of food preservation.                    | 5M |

**UNIT-II**

- |   |          |  |    |
|---|----------|--|----|
| 4 | <b>a</b> | What are the important considerations during unloading of bulk milk tanks? | 5M |
|   | <b>b</b> | Draw the process flow chart for preparation of pasteurized milk.           | 5M |

**OR**

- |   |          |  |    |
|---|----------|--|----|
| 5 | <b>a</b> | Draw the process flow chart for preparation of ice cream.  | 5M |
|   | <b>b</b> | What should be the ratio of milk with 1.5% fat (doubled toned milk) and 80% cream to get the final milk with 3% fat? | 5M |

**UNIT-III**

- |   |          |   |    |
|---|----------|---|----|
| 6 | <b>a</b> | Explain the effect of different operational parameters during homogenization. | 5M |
|   | <b>b</b> | What are the factors considered while planning dairy building.                | 5M |

**OR**

- |   |          |  |    |
|---|----------|--|----|
| 7 | <b>a</b> | Explain the working principle of tubular bowl centrifuge with neat sketch. | 6M |
|   | <b>b</b> | Define and distinguish between paneer, butter, and ghee.                   | 4M |

**UNIT-IV**

- |   |          |  |    |
|---|----------|--|----|
| 8 | <b>a</b> | Draw the schematic flow diagram of an evaporator to show the basic components of the evaporation system. | 6M |
|   | <b>b</b> | Explain the design of multiple effect evaporator with neat sketch.                                       | 4M |

**OR**

- |   |          |  |    |
|---|----------|--|----|
| 9 | <b>a</b> | Explain agitated thin film evaporator with neat sketch.        | 5M |
|   | <b>b</b> | What are the factors affecting the selection of an evaporator. | 5M |

**UNIT-V**

- |    |          |   |    |
|----|----------|---|----|
| 10 | <b>a</b> | Explain the freezing of foods. Enlist the freezing equipment.               | 5M |
|    | <b>b</b> | Explain ultra filtration and write the characteristics of ultra filtration. | 5M |

**OR**

- |    |          |  |    |
|----|----------|--|----|
| 11 | <b>a</b> | Write advantages, limitations and applications of reverse osmosis. | 5M |
|    | <b>b</b> | Explain the method for determination of proteins.                  | 5M |

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