14 marks:

1. **Explain in detail the essential constituents of our food ?**
2. **Define what Texture is and briefly explain the Texture Terms Used in Sensory Texture Profiling.**
3. **Write in detail about the process of Freeze Concentration. (7)**
4. **Write in brief on membrane concentration and explain the types of membranes.**

14 marks:

1. **Brief about Pasteurization and the effect of pasteurization.**
2. **Write in detail about High Temperature and Blanching process. (7)**
3. **Illustrate in detail on Sterilization and Microwave Sterilization.**
4. **Explain briefly on thermal destruction of microorganisms.**
5. **The activation energy of a chemical reaction is 100 kJ/mol and it's A factor is 10 $M^{-1}s^{-1}$. Find the rate constant of this equation at a temperature of 300 K.(7)**
6. **At a temperature of 600 K, the rate constant of a chemical reaction is $2.75*10^{-8}$ $M^{-1}s^{-1}$. When the temperature is increased to 800K, the rate constant for the same reaction is $1.95*10^{-7}M^{-1}s^{-1}$. What is the activation energy of this reaction? (7)**
7. **Give the detailed note on Food Irradiation and its Applications.**
8. **Write a note on Radio Frequency and Microwave heating of foods in detail.**

14marks:

1. **Explain food spoilage and causes of it along with the effect of spoilage on Nutritional quality.**
2. **Write in detail about the types of bonding of moisture in the product and the estimation of moisture content.**
3. **Write about the importance of moisture content in foods.**
4. **Illustrate the importance of EMC and the factors affecting the EMC.**
5. **Write a detailed note on the types of dryers- and their respective application in food industry.**
6. **Explain in detail about process of Osmotic Dehydration.**
7. **Brief about Foam Mat Drying with its practical applications. (7)**

14marks:

1. **Define Milk Fat. Give the physical properties of Milk Fat. (7)**
2. **Explain the Physico- chemical Properties of Milk in detail.(10)**
3. **Give the complete milk reception operations in detailed manner.**
4. **Define Storage tank for milk and also illustrate the types of storage tanks.**
5. **Explain the Methods of Pasteurization.**

6. **Write a detailed note on UHT processing of milk with different types of UHT processing.**
7. **Brief about the batch type method of pasteurization.(7)**

14marks:

1. **Brief in detail about the milk powder production process. (10)**
2. **Explain in detail with the history and production process of the condensed milk and powdered milk.(10)**
3. **Write about Ice cream freezers.(4)**
4. **Brief about Drying and Roller Drying of Whey. (4)**
5. **Explain in detail about the Butter Churn and Ghee Manufacturing process.**
6. **What is Clarification? Give a detailed write up on the complete Milk clarification process and the factors affecting clarification.**
7. **Illustrate the construction of cream separators with neat diagrams.**
8. **Explain the Cream separation by centrifugal method. (7)**
9. **Explain the Cream separation by gravity method. (7)**
10. **Differentiate between the particulars of gravity and centrifugal method of cream separation.**
11. **What are the theories of homogenization? Explain.(7)**
12. **Briefly explain the Homogenizer and the Homogenization - Types and Operation of Homogenizers.**