



**KERALA AGRICULTURAL UNIVERSITY**  
**B.Tech.(Food Engg) 2015 Admission**  
**VI Semester Final Examination - July 2018**

**Fden 3209**

**Food Process Equipment Design and Plant Layout (2+1)**

**Marks: 50**  
**Time: 2 hours**

- I Define the following (10x1=10)**
- 1 Sterilization
  - 2 Homogenization
  - 3 Heat exchanger
  - 4 Freezing
  - 5 Hot extrusion
  - 6 Food plant size
  - 7 Food plant utilities
  - 8 Food plant layout
  - 9 Food process schedule
  - 10 Sorting
- II Write short notes/answers etc on ANY FIVE (5x2=10)**
- 1 Pressure vessels.
  - 2 Mass and energy balance.
  - 3 Difference between evaporation and drying.
  - 4 What are the basic types of flow patterns employed in designing the layout.
  - 5 Explain break even analysis.
  - 6 List the factors influencing plant layout.
  - 7 Difference between product and process layout.
- III Answer any FIVE of the following. (5x4=20)**
- 1 Explain the methods of feeding of evaporator.
  - 2 Types of packaging machinery.
  - 3 Steps to scale up food processing equipments.
  - 4 What are the weightage methods for location decision.
  - 5 Factors to be considered for site/community selection.
  - 6 Criteria's for selection of drying equipment.
  - 7 Draw the layout for fruit/vegetable processing plant.
- IV Write an essay on any ONE of the following (1x10=10)**
- 1 Design of heat exchanger.
  - 2 Explain food plant design process.

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