



KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Food. Engg.) 2018 Admission
VI Semester Final Examination- October 2021

Fden.3209

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

Marks: 50
Time: 2 hours
(10x1=10)

I Fill in the blanks

1. Planks equation is basically used for calculation of -----
2. Conveyors are used primarily for-----movement.
3. The principle of size reduction in ball mill is -----
4. foods are evaporated in forced convection evaporators.
5. In SI unit, one ton of refrigeration is equivalent to..... kJ/min
6. Extrusion cooking is a process which reduces microbial contamination and inactivates enzymes
7. Parboiling of paddy is a-----process
8. By reducing the pressure, the boiling point of liquid can be-----
9. Thawing takes.....(more/ less) time than freezing
10. LSU dryer was developed at-----

II Write short notes on ANY FIVE of the following

(5x2=10)

1. Freezers
2. Homogenizer
3. Parboiling methods
4. Heat exchanger
5. Falling film evaporator
6. Screw conveyor
7. Double cone mixer

III Answer ANY FIVE of the following

(5x4=20)

1. Define extrusion? Explain any one type of extruders
2. List out the various dryers used in food industry; explain any two types with neat diagram
3. Explain different types of packaging equipments used in food industry
4. Discuss about different types of layouts
5. What are the machineries used for the separation of products by size , shape and colour
6. 100 kg tomato juice containing 5% total solids (w/w) is concentrated to 25% Total solids (w/w). Calculate the total amount of water removed from tomato juice in kg.
7. Discuss the construction and design of sterilizer.

IV Write an essay on ANY ONE of the following

(1x10=10)

1. Explain in detail about any four types machineries used for material handling and transportation in food industry
2. Describe in detail in various types of evaporator with neat sketch?
