



KERALA AGRICULTURAL UNIVERSITY

B.Tech.(Food Engg) 2016 Admission

VI Semester Final Examination- June 2019

Fden.3209

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

Marks: 50

Time: 2 hours

(10x1=10)

**I Fill up the blanks**

- 1 In ship manufacturing \_\_\_\_\_ type of layout preferred.
- 2 The process layout is employed for \_\_\_\_\_
- 3 \_\_\_\_\_ is the removal of solvent as vapor from a solution of solid in a liquid.
- 4 Product and manufacturing process design are \_\_\_\_\_
- 5 \_\_\_\_\_ layout has relatively high degree of flexibility.

**State whether the following statements are true or false**

- 6 Plant design refers to the overall design of a manufacturing facility.
- 7 Break even point is a neither profit nor loss.
- 8 Product layout is employed for Batch production .
- 9 Flexibility cannot be achieved with Immovable equipment.
- 10 The size reduction is more frequently referred to as emulsification.

**II Write short notes/answers etc on ANY FIVE**

(5x2=10)

- 1 Plant layout objectives.
- 2 Freezing and its applications.
- 3 Heat exchangers.
- 4 Spray dryer.
- 5 Size reduction in hammer mills.
- 6 Importance of unit operation during designing of process equipments.
- 7 Steps of designing heat exchanger.

**III Answer any FIVE of the following.**

(5x4=20)

- 1 Types of machinery used for separation of products by size. Explain any one.
- 2 Application of engineering principles to design and selection of food processing equipments.
- 3 Suitability of Fixed position layout.
- 4 Factors to be considered in efficient plant layout?
- 5 Differentiate the dryer and evaporator with respect to process and machinery.
- 6 "The best designed food processing equipment may also fail 'Do you agree with the statement? Justify your answer"
- 7 Single and twin screw extruders.

**IV Answer any ONE of the following**

(1x10=10)

- 1 Plant Layout Concept, Objectives, Principles and Types.
- 2 Heat exchangers and its types.

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