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53 (FPT 503) FPEN

2018

FOOD PROCESS ENGG.

Paper : FPT 503

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer **any five** questions.

1. (a) How do you classify various evaporation equipment ?
Describe short-tube evaporator system with neat diagram. 5+5
- (b) How falling film evaporator is different from rising film evaporator ?
10
2. (a) What is meant by Dehydration ?
Describe briefly the principles of drying. 3+7

Contd.

- (b) Describe with a neat diagram a cabinet tray dryer and its applications in Food Processing. 6+4
3. (a) Describe a relationship between relative humidity and percentage humidity. 10
- (b) Describe what is meant by : 10
- (i) Wet bulb temperature
- (ii) Dry bulb temperature
- (iii) Dew point temperature.
4. (a) What do you mean by EMC? Write down the different models associated with EMC of agricultural products. 10
- (b) Define the term 'Filtration'. Discuss mechanisms of Filtration with examples. 10
5. (a) What is meant by Filter aid? Why is it used in Filtration process? 10
- (b) How constant rate period is different from falling rate period in drying process? 10

6. Write short notes on : 4×5=20

(i) Humidifier

(ii) Impellers

(iii) Hysteresis

(iv) Freeze dryer.

7. Differentiate the following : 4×5=20

(i) Sorting and Grading

(ii) Drying and Dehydration

(iii) Single stage evaporator and Multiple effect evaporator

(iv) Conduction drying and Convective drying.

4x5-20

6. Write short notes on:

- (i) Humidifier
- (ii) Impellers
- (iii) Hysteresis
- (iv) Freeze dryer

4x5-20

7. Differentiate the following:

- (i) Soiling and Crusting
- (ii) Drying and Dehydration
- (iii) Single stage evaporator and Multiple effect evaporator
- (iv) Conduction drying and Convective drying