53 (FPT 503) FPEN

2017

FOOD PROCESS ENGINEERING

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)* Represent the following psychrometric process in psychrometric chart

    (i) Heating and de-humidifying

    (ii) Drying of Food materials.

                                              10

(b) Two hundred *kg* of wheat at 23% moisture content (wb) is dried to 12% (db) moisture content. Calculate :

   (i) The initial moisture content (db) and the final weight.

   (ii) How much moisture is removed ?
   10

2. (a) Write down the different models associated with EMC of agricultural products.   10

   (b) With neat labelled diagram discuss freeze dryer.   10

3. (a) What is meant by multiple effect evaporator ?   5

   (b) What are various Feeding methods in a multiple effect evaporator ? Discuss the relative advantages of each method.   10+5

4. (a) Describe briefly the purpose and principle of drying.   10

   (b) Compare and contrast dehydration and drying.   10

5. *(a)* What are the various parameters you need to consider for selection of a Filter Press ? 10

   (b) Describe the process of filtration as a unit-operation for separation of suspended solids. 10

6. Differentiate the following : 4×5=20

   (i) Constant rate drying and Falling rate drying

   (ii) Single stage evaporator and Multistage evaporator

   (iii) Distillation and Evaporation

   (iv) Conduction drying and Convection drying.

7. Write short notes on : 4×5=20

   (i) Agitator

   (ii) Brand moisture

   (iii) Spray dryer

   (iv) Batch crystallizer.

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