

Total No. of printed pages = 3

19/5th Sem/UFET502



2021

FOOD PROCESS ENGINEERING

Full Marks – 100

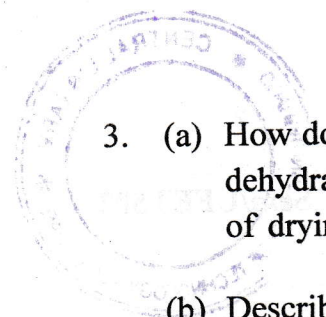
Time – Three hours

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

Answer any *five* questions.

1. (a) How de-humidification of air is done? Describe typical humidification equipment with neat labelled diagram. 5+5=10
- (b) Describe relationship between relative humidity and percentage humidity. 5
- (c) Write short notes on Colling tower. 5
2. (a) How evaporation is different from distillation? Discuss various components of an evaporator. 5+5=10
- (b) What is meant by multiple effect evaporators? Discuss different feeding methods in a multiple effect evaporator. 5+5=10

[Turn over



3. (a) How do you classify foods for the purpose of dehydration ? Describe briefly the principles of drying. $5+5=10$

(b) Describe with a neat diagram a rotary dryer and its application in food processing. 10

4. (a) Why does the need arise to find various advanced drying techniques ? 5

(b) What are various types of advanced drying technique ? 5

(c) What criteria do you follow for selection of a dryer in food processing ? 10

5. (a) What do you mean by EMC ? Write down the importance of EMC ? $5+5=10$

(b) With neat labelled diagram / schematic diagram / line diagram discuss (any two) :

$5 \times 2 = 10$

(i) Heating and Dehumidification Process

(ii) Evaporative Cooling

(iii) Mechanism of Drying.



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6. Write short notes on any *four* of the following :

4×5=20

- (a) Electrical resistance method of moisture content determination
- (b) Wet bulb temperature
- (c) Drum dryer
- (d) Henderson's equation (EMC)
- (e) Batch Crystallizer
- (f) Bound Moisture.

7. Differentiate the following (any *four*) of the following :

4×5=20

- (a) Drying and Dehydration
- (b) Falling film and Rising film evaporator
- (c) Constant rate period and Falling rate period
- (d) Thin layer drying and deep bed drying
- (e) Wet bulb temperature and Dry bulb temperature
- (f) Bound moisture and Unbound Moisture.

