

2023

FOOD ENGINEERING OPERATIONS-II

Full Marks: 100

Time: Three hours

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

Answer any five questions.

1. a) Why drying is important? 5+5
If the moisture content of the freshly harvested wheat is 125% Dry Basis moisture content Convert it into Wet Basis Moisture content? =10
- b) With neat labelled diagram; Write the mechanism of drying. 10
2. a) How dehydration is different from evaporation? 10
- b) With neat labeled diagram discuss single effect evaporator. 10
3. a) Define Humidification. Discuss the mechanism of humidification. 10
- b) Describe typical humidification equipment with neat labelled diagram 10
4. a) With neat labeled diagram discuss Falling rate period in Drying curve. 10
- b) Define moisture content. Discuss different determination methods of moisture content determination. 3+7=10

5. Differentiate the following (all four) 05X04
= 20
- i) Wet Basis and dry basis of Moisture content
 - ii) Distillation and Crystallization
 - iii) Falling film evaporator and Rising film evaporator
 - iv) Dry bulb temperature and Wet Bulb Temperature
6. Write short notes on (any four) 05X04
= 20
- i) De-humidification
 - ii) Critical Moisture Content
 - iii) Degree of saturation
 - iv) Relative Humidity
 - v) Drying Curve
 - vi) Dew Point Temperature
7. a) With neat labelled diagram discuss rotary dryer and its application in food industry. 10
- b) With neat labelled diagram discuss freeze dryer. 10