

B.Sc. FOOD SCIENCE & TECHNOLOGY
First Semester
FOOD PROCESSING & PRESERVATION
(BFST- 104)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any four from Question no. 2 to 8
Question no. 1 is compulsory.

1. Define angle of repose. What is evaporation? A single effect evaporator is being used to concentrate syrup from 10% solid to 50% solid at the rate of 100 kg/hr. Calculate mass of product & mass of vapour. (2+2+6=10)
2. Define the terms— (2×5=10)
 - a. Roundness
 - b. Roundness ratio
 - c. Sphericity
 - d. Pasteurization
 - e. Sterilization
3. What is terminal velocity? During evaluation of an air screen grain cleaner with 2 screens 250 g samples were collected for analysis of clean seed fraction from different outlets. The data are presented in the following Table. Calculate the cleaning efficiency of the cleaner. (10)

Sample fraction	Feed	Clean grain outlet	Blower outlet	Blower outlet	Undersize outlet
Cleaned seed	231	247	1.25	4.5	2
Impurities	19	3	248.75	245.5	248

4. What is effectiveness of screen? Write down the expression for screen efficiency.
Determine the effectiveness of the below two screens- (2+1+7=10)

IS Screen	Feed	Overflow	Underflow
50	0.16	0.615	0.03
30	0.75	0.955	0.610

5. Define refrigeration. Explain vapour compression cycle with diagram.(2+8=10)
6. Explain Hysteresis Effect. Determine the EMC of wheat at 27°C and 80% relative humidity using Hendersan equation. (Given $C=10.06 \times 10^{-7}$ and $n=3.03$)
(4+6=10)
7. What is alcoholic fermentation? Write down the factors affecting fermentation.
Write in brief about four fermented products. (2+4+4=10)
8. What are food additives? Describe some of the common food additives? Write the difference between grading & sorting. (2+6+2=10)

IV. Fill in the blanks:

1×8=8

1.means removal of moisture to very low levels usually to bone dry conditions.
2.means removal of moisture from grains and other products to predetermined levels.
3. Heat content of a material is its.....
4. In deep bed drying, layer of grains is.....
5. Osmotic drying is used for products such as.....
6.is known as the controversial flavor.
7. $C_6H_{12}O_6 + \text{yeast} \longrightarrow \dots + \dots$
8.is done to inactivate enzymes and to destroy the peroxide.
