

B. Sc FOOD SCIENCE & TECHNOLOGY

2ND SEMESTER

UNIT OPERATION IN FOOD PROCESSING

BFST-201

Duration: 3 Hrs.

Marks: 70

{ PART : A (OBJECTIVE) = 20
PART : B (DESCRIPTIVE) = 50 }

[PART-B:Descriptive]

Duration: 2 Hrs. 40 Mins.Marks: 50

[**Answer question no. One (1) & any four (4) from the rest**]

1. 'Membranes can separate particles and molecules over a wide particle size range & molecular weights' Explain. 10
2. State Darcy's law. Potatoes are dried from 14% to 93% total solids. Considering 8% peeling losses, the product yield from 1 ton of raw potato will be? 10
3. Define radiation with expression. Classify boilers. Given 1000 kg cream testing 50% fat, how much skim milk testing 0.1% fat must be added to obtain 40% fat in the standardized cream. 3+4+3
4. Differentiate between conduction and convection. The rate of heat transfer per unit area from a metal plate is 1000 W/m². The surface temperature of the plate is 120°C and ambient temperature is 20°C. Estimate the heat transfer coefficient. 6+4
5. Differential between dry bulb and wet bulb temperature. If the DBT and WBT of moist air are 35°C and 26°C find the other thermodynamic properties from psychometric chart. 3+7
6. Define the terms - (i) Dew point temperature, (ii) Young's modulus, (iii) Modulus of elasticity, (iv) Viscosity, and (v) Forced convection 10
7. Explain Reynolds experiment in determining different flow pattern with diagram. Two fluids - milk and rapeseed oil are flowing along pipes of same diameter of 5 cm at 20°C and at the same flow velocity of 3 m/s. Determine whether the flow is streamline or turbulent in each fluid. 5+5
($\rho_{\text{milk}} = 1030 \text{ kg/m}^3$ and $\rho_{\text{oil}} = 900 \text{ kg/m}^3$)
8. Write down the units of - (i) Resistance, (ii) Thermal conductivity, (iii) Charge, (iv) Thermal diffusivity and (v) Force. 5+5
Write down the dimension of - (i) Frequency, (ii) Density, (iii) Centrifugal force, (iv) Torque and (v) Wavelength.

19. Which of the following is not unit of time

- a. Second
 c. Per sec

- b. Year
d. Light year

20. Pick up the correct statement -

- a. In SI system, surface tension is N/m
 b. In SI system, power is Watt
 c. In SI system, force is Newton
d. All the above

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UNIVERSITY OF SCIENCE & TECHNOLOGY, MEGHALAYA



Question Paper CUM Answer Sheet

[PART (A) : OBJECTIVE]

Serial no. of the main
Answer sheet

Course :

Semester : Roll No :

Enrollment No : Course code :

Course Title :

Session : 2016-17 Date :

Instructions / Guidelines

- The paper contains twenty (20) / ten (10) questions.
- The student shall write the answer in the box where it is provided.
- The student shall not overwrite / erase any answer and no mark shall be given for such act.
- Hand over the question paper cum answer sheet (Objective) within the allotted time (20 minutes / 10 minutes) to the invigilator.

Full Marks	Marks Obtained	Remarks
20		

Scrutinizer's Signature

Examiner's Signature

Invigilator's Signature