

EASTERN UNIVERSITY, SRI LANKA
SECOND YEAR SECOND SEMESTER EXAMINATION IN AGRICULTURE - 2004/2005
AEN 2202 POST HARVEST TECHNOLOGY (2:30/00)

Answer all questions
Time: Two hours

1. (a) List the factors considered in quality control of paddy.
(b) Briefly describe the different paddy storage method practised in Sri Lanka and moisture migration in storage.
(c) Briefly discuss the history of marketing paddy in Sri Lanka and the importance of storage of paddy in an effective marketing system.

2. (a) Psychrometric chart and its use.
(b) A bin of paddy is to be dried with air at dry bulb temperature of $42\text{ }^{\circ}\text{C}$ and the airflow rate of $48\text{ m}^3/\text{s}$. The average relative humidity of the outlet air is 85%. The atmospheric conditions of the air are $30\text{ }^{\circ}\text{C}$ dry bulb temperature and $20\text{ }^{\circ}\text{C}$ wet bulb temperature. Determine the amount of sensible heat to be added per hour and find out the amount of moisture could be removed from the grain mass per hour.

(Psychrometric chart is provided)

3. (a) Briefly describe the following;
 - (i) Sensible heating and cooling.
 - (ii) Cooling and dehumidifying.
 - (iii) Heating with humidifying.

- (b) A bin of grain is to be chilled with air at a dry bulb temperature of $0\text{ }^{\circ}\text{C}$ and an air flow rate of $48\text{ m}^3/\text{s}$. If ambient conditions of the air are $30\text{ }^{\circ}\text{C}$ dry bulb temperature and $20\text{ }^{\circ}\text{C}$ wet bulb temperature, determine the amount of heat and moisture which has to be removed per hour from the air by this chilling unit.

(Psychrometric chart is provided)

4. (a) Briefly explain the significance of parboiling in paddy processing and give suggestions to improve parboiling technique in Sri Lanka.

(b) Write short notes on the following;

- (i) Climacteric fruits.
- (ii) Principal causes of post harvest losses in fruits and vegetables.
- (iii) Controlled atmospheric storage of fresh produce and its importance.