

**KERALA AGRICULTURAL UNIVERSITY**  
**B.Sc. Hons. (Agriculture) – 2007 Admission - V<sup>th</sup> Semester**  
**Final Examination - January 2010**

Cat. No. : Engg 3103

Max. marks: 80

Title : Protected Cultivation and Post-harvest  
Technology (1+1)

Time : 3 hours

I(a) Fill in the blanks

(10x1=10)

1. Holding of grains between two drying passes is termed as \_\_\_\_\_
2. Most common cladding material used for green house construction is \_\_\_\_\_
3. The m.c. of the solid in equilibrium with the surrounding conditions is known as \_\_\_\_\_
4. LSU dryer was developed in \_\_\_\_\_

(b) Define the following

5. Blanching
6. Ripening
7. MAP
8. Freezing injury

(c) Say true or false

9. A disc separator separates materials on the basis of difference of weight of various constituents.
10. Hammer mill works on the principle of impact force.

II. Write short notes on Any ten of the following

(10x3=30)

1. Green house effect
2. Classification of green house based on a)Utility b)material of construction
3. Different methods of drying based on the mode of heat transfer
4. Deep bed drying
5. Rittinger's law
6. Disc separator
7. Cooling methods in a green house
8. Hysteresis
9. Screening and purposes of screen motion
10. What is the difference between a fruit and vegetable?
11. Minimal processing of fruits and vegetables
12. Even span and uneven span type green houses

III. Write short essays on Any Six of the following

(6x5=30)

1. What is GAP? Explain the different factors.
2. What is pre-cooling? What are the different methods of pre-cooling?
3. Derive the drying equation  
$$\frac{M-M_e}{M_0-M_e} = e^{-k\theta}$$
4. Two tones of paddy with 22 percent moisture content on wet basis is to be dried to 13

- Percent moisture content on dry basis. Calculate the weight of bone dry products and water evaporated.
5. Explain the working of fan and pad cooling system with a neat sketch.
  6. What are the functions that a root medium inside a protective structure must achieve to support good plant growth? What are the important components of a root media?
  7. What are the advantages of using green houses?
  8. Explain classification of green houses based on shape with neat sketches of different cross sections?

**IV. Write essays on Any One**

(1x10=10)

1. Which are the environmental parameters to be considered during the design of a green house? What is the effect of these parameters on green house crops?
2. What are the factors affecting storage? Explain the different types of storage structures?.