

**KERALA AGRICULTURAL UNIVERSITY**  
**B.Sc (Hons.) Agriculture – 2009 Admission V<sup>th</sup> Semester**  
**Final Examination – January / February 2012**

**Title : Engg. 3103**

**Marks : 80**

**Course : Protected Cultivation and Post-Harvest Technology (1+1)**

**Time : 3 Hours**

I. Answer all the questions (1 to 10)

(10 x 1 =10)

Fill up the blanks (1 to 5)

1. The removal of field heat from the horticultural produce is known as \_\_\_\_\_
2. HACCP is \_\_\_\_\_
3. \_\_\_\_\_ dryer is most commonly used in modern rice mills.
4. \_\_\_\_\_ separators are used for separating food materials based on relative length.
5. Cyclone separator is used for separating \_\_\_\_\_.

Answer true or false (6 to 10)

6. Winnowing separates chaff and dust from grains.
7. Mechanical dryers use hot air for drying crops.
8. Hammer mill is a size reduction equipment
9. Colour estimation is a destructive method of testing.
10. The green house is used for cooling also.

II. Answer any ten of the following questions

(10 x3 =30)

1. Differentiate between drying and dehydration
2. Write a note on controlled atmosphere storage
3. Explain the working principle of colour sorter
4. Explain importance of tempering
5. Explain construction of different threshing drums with suitability for crop.
6. Enumerate the advantages of modern storage structures.
7. Explain the method of estimation of thermal efficiency and heat utilisation factor of a dryer.
8. Enumerate the advantages of mechanical drying.
9. Explain working of a ball mill with sketch.
10. Derive a relationship to convert the moisture content on dry basis to wet basis.
11. Write a note on drying characteristic curves.
12. Explain the working of a cyclone separator.

III. Write short essays on any SIX of the following questions

(6 x5 =30)

1. Explain the construction and working of a specific gravity separator with sketch.
2. Explain the effect of temperature, relative humidity and gas composition on storage of fruits and vegetables in modified and controlled atmosphere storage.
3. Explain the types of hazards and give examples.
4. Explain the process of fruit grading and give the various types of grading process.
5. Name the different types of sieve perforations and their suitability for crops.

6. Describe the working of winnower with a sketch.
7. Explain the hot air production systems followed in mechanical drying.
8. Explain the design criteria of green house for cooling purpose

(1 x 10 = 10)

IV. Write essay on any one of the following questions

- 1.a. Explain the construction and working of LSU dryer.
- 1.b. Enumerate the advantages and disadvantages between batch type and continuous type mechanical dryers.
- 2.a. Explain the construction of a modified atmosphere storage system
- 2.b. Differentiate between mixing and non-mixing type dryers