

# KERALA AGRICULTURAL UNIVERSITY

B.Tech.Food Engg. 2015 Admission

IIIrd Semester Final Examination-January 2017

Cat. No: Fden 2104

Marks: 50

Title: Crop Process Engineering(2+1)

Time : 2 hours

I. Fill in the blanks:

(10 x 1=10)

1. If moisture content of paddy on dry basis is 25 % the moisture content on wet basis will be -----
2. LSU type dryer was developed in -----
3. The relation ship between EMC and RH for biological material has been given by -----
4. Spiral separator separates the material on the basis of -----
5. In thin layer drying of food grains the thickness of layer is limited to ----- cm.
6. In ball mill the speed of the mill should be ----- than critical speed.
7. In size reduction, the ratio of the surface energy created by crushing to the energy absorbed by solid is known as -----
8. The differential speed of rolls of wheat mill is -----
9. Parboiling of paddy ----- the hardness of rice.
10. In the CFTRI method of pulse milling, hot temperature of LSU dryer is ----- °C.

II. Write short notes/answers on ANY FIVE:

(5x 2=10)

1. Write the methods of moisture determination.
2. Explain the importance of equilibrium moisture content.
3. Differentiate between ideal and actual screen.
4. Write Bond's law.
5. Explain the working principle of indented cylinder separator.
6. Explain the working of rubber roll sheller.
7. Write a note on dry milling of corn.

III Write answers on ANY FIVE:

(5 x 4=20)

1. Discuss the theory of drying with illustration.
2. Explain the construction and working of vertical cone polisher with a suitable sketch.
3. Explain the principle and working of groundnut decorticator with a neat diagram.
4. Give a detailed note on wheat milling.
5. Explain in detail the wet milling of pulses.
6. Determine the values of c and n from the Henderson equation for the following data obtained from thin layer paddy drying studies.  
i. RH=30%, t=50°C, Me=10.5%      ii. RH=55% , t=50°C, Me=15.5%
7. Explain the construction and operation of LSU dryer with neat sketch.

**IV. Write essay on any ONE**

**(1 x 10=10)**

1.
  - a) Explain the layout of modern rice mill with a process flow chart.
  - b) Determine the quantity of parboiled paddy with 40% moisture content on wet basis required to produce 1 tonne of product with 12% moisture content on wet basis. Work out the problem on wet basis and check the answer using dry basis.
2.
  - a) Give a detailed account on material handling equipments.
  - b) Write a short note on millet based products.

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