

# KERALA AGRICULTURAL UNIVERSITY

B.Tech (Food.Engg) 2012 Admission  
II<sup>nd</sup> Semester Final Examination- July -2013

Cat. No: Fden.1201

Title: Engineering Properties of Biological Materials (2+1)

Marks: 80

Time: 3 hours

## Part -A

Define the following

(10 x 1=10)

1. Roundness
2. Porosity
3. Stress and Strain
4. Rolling resistance
5. Aerodynamic
6. Angle of internal friction
7. Aero dynamics
8. Thermal diffusivity
9. Transient heat flow
10. Dielectric loss

## Part -B

(10 x 3=30)

Answer any TEN questions

1. Explain physical characteristics of food grains.
2. What are the methods used for measurement of colour.
3. Differentiate Newtonian and Non-Newtonian fluid.
4. Write a note on rheological properties.
5. Explain mechanical damage
6. What is plastic flow?
7. Define steady state heat flow.
8. Differentiate elastic and plastic behavior
9. Define dynamic viscosity.
10. Write a brief note on flow of bulk materials.
11. Differentiate compressive and shear stress.
12. Differentiate bulk density and true density.

**Part-C**

(6 x 5=30)

Answer any **SIX** questions

1. Explain rheological models.
2. What are time independent fluids? Explain
3. Write a note on mechanical properties
4. Explain working of rotational viscometers.
5. Explain measurement of lift and drag force.
6. Explain textural measurements by sensory method.
7. Discuss aerodynamic properties.
8. Explain measurement of physical properties.

**Part-D**

(1 x 10=10)

Answer any **ONE** question

1. Discuss application of electrical properties in design of food processing equipments.
2. Explain various thermal properties and its application.

\*\*\*\*\*