



**KERALA AGRICULTURAL UNIVERSITY**  
**B.Tech.(Ag. Engg.) 2018 Admission**  
**I Semester Final Examination-January 2019**

Fape.1101

**Engineering Properties of Agricultural Produce (1+1)**

**Marks: 50**  
**Time: 2 hours**

**I Fill in the blanks: (10x1=10)**

- 1 The study of deformation and flow is called \_\_\_\_\_
- 2 The shape which is formed when an ellipse rotates about its minor axis is known as \_\_\_\_\_
- 3 The upward force acting on an object immersed in a liquid is called \_\_\_\_\_
- 4 \_\_\_\_\_ is used as a solvent to measure the specific gravity of seed and grains in pycnometer.
- 5 A combined solid like and liquid like behavior in which the stress-strain relationship is time dependent is known as \_\_\_\_\_
- 6 The fluids which show a yield stress and flow behavior index of 1 is called \_\_\_\_\_
- 7 The work required to cause the rupture in the material is called \_\_\_\_\_.
- 8 Air comparison pycnometer is used to measure \_\_\_\_\_
- 9 The unit of electrical current is \_\_\_\_\_
- 10 In the relation  $C_d = c/Re$ , the constant 'c' is \_\_\_\_\_ for the sphere settling in a fluid.

**II Write Short notes on any FIVE of the following (5x2=10)**

- 1 Drag force
- 2 Bioyield point
- 3 Angle of repose
- 4 Viscosity
- 5 Rolling resistance
- 6 Electrical Conductivity
- 7 Shear modulus

**III Answer any FIVE of the following. (5x4=20)**

- 1 Ideal materials. (Any two)
- 2 Derive the expression for terminal velocity of a spherical particle.
- 3 Generalized Kelvin Model.
- 4 What do you understand by Electrical permittivity, dielectric constant and dielectric loss factor?
- 5 Methods for measurement of Thermal conductivity. (Any two)
- 6 What are the methods to find out the fruit surface area?
- 7 Briefly explain a method for measurement of electrical conductivity of foods.

**IV Answer any ONE of the following (1x10=10)**

- 1 Importance of physical properties of agricultural produce for designing of processing machines.
- 2 Application of aerodynamic properties in handling and processing of agricultural produce.

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