



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.
