KERALA AGRICULTURAL UNIVERSITY

B.Tech.(Food Engg.) 2016 Admission

II Semester Final Examination – August - 2017

Cat. No: Fden. 1201 Marks: 50

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

I. Choose the correct answer: (10 x 1=10)

1. One of the following is not a physical property of food materials.
   a) Porosity b) Specific gravity c) Specific heat d) Frontal area
2. Mechanical damage to seeds and grains which occurs during.
   a) Harvesting b) Threshing c) Handling d) all the above
3. The thermal processing may include.
   a) Heating b) cooling c) drying d) all the above
4. Heat or cooling of agricultural products may be accomplished by the method of.
   a) conduction b) convection c) radiation d) all the above
5. A scalper is used for.
   a) grading the material b) rough separator c) removing of stones
   d) fine separation of material
6. Which solvent is used to measure the specific gravity of seed and grains in pycnometer?
   a) Benzene b) n- hexane c) toluene d) water
7. Which method is not used to measure the specific gravity of fruits and vegetables?
   a) Pycnometer method b) Platform balance c) Specific gravity gradient tube.
   d) Specific gravity balance
8. Henderson equation is very much popular and based on the .
   a) Potential field theory b) Capillary condensation theory c) Gibb's adsorption equation
   d) Multilayer molecular adsorption theory
9. Ideal plastic behaviour is represented by.
   a) Newtonian liquid b) St. venant body c) Hookean body d) All the above
10. Ideal viscous behaviour is observed in.
    a) Newtonian liquid b) St. venant body c) Hookean body d) All the above

II. Write short notes on ANY FIVE: (5x 2=10)

1. Coefficient of friction.
2. Porosity.
3. Visco elasticity.
4. Terminal velocity.
5. Angle of internal friction.
6. Dielectric constant.
7. Specific heat.

III Explain the difference between the following (ANY FIVE): (5 x 4=20)

1. Roundness and Sphericity.
2. Lift force and drag force.
3. Bulk density and true density.
4. Thermal conductivity and thermal diffusivity.
5. Stress and strain.
6. Firmness and hardness.
7. Steady state and unsteady state of heat flow in biological materials.

IV. Explain in detail on (any ONE): (1 x 10=10)

1. The thermal properties of biological materials with suitable examples.
2. The Rheological properties of biological materials with suitable examples.

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