Q.P. Code: 16AG701 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech II Year I Semester Regular Examinations November 2018

ENGINEERING PROPERTIES OF BIOLOGICAL MATERIALS

(AGE)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	**a**	How the porosity is related with the true and bulk densities? How the porosity influence the drying process?	6M
	b	Describe any one of the standard method for determining true density of grains?	6M

OR

2	**a**	Explain a method for measuring the surface area of fruits?	6M
	b	How the moisture content influence the physical properties of grains?	6M

UNIT-II

3	**a**	Define thermal conductivity, thermal diffusivity, and specific heat?	6M
	b	Explain the method for measuring the thermal conductivity.	6M

OR

4	**a**	How the thermal properties influence the heat transfer process in food?	6M
	b	What is the influence of moisture content on thermal conductivity, and specific heat?	6M

UNIT-III

5	**a**	What are the differences between angle of repose and angle of internal friction?	6M
	b	Define drag coefficient? What is its significance in the transport of produce?	6M

OR

6	**a**	Define terminal velocity? Derive the expression for terminal velocity?	6M
	b	How the frictional properties influence the flow properties of the grains in machines?	6M

UNIT-IV

7	**a**	What is Rheology? Explain.	6M
	b	Why the mechanical properties are so important in product development and standardization?	6M

OR

8	**a**	With a neat diagram, explain the degree of elasticity?	6M
	b	What is the rupture point? What is its significance?	6M

UNIT-V

9	**a**	Write the principle of measuring the color?	6M
	b	What are the L*, a*, and b* values? Write their significance.	6M

OR

10	**a**	How the dielectric properties influence the heating with microwaves?	6M
	b	With a neat diagram explain the electrostatic separation?	6M

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