Roll No. | | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (Food Technology) (Sem.–3)

ENGINEERING PROPERTIES OF FOOD

Subject Code : BTFT 216-19

M.Code : 78733

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Write briefly :

1) Distinguish true density, particle density and bulk density.

2) State Hooke's law. Write its mathematical expression.

3) What is specific heat capacity? Name any instrument used to measure it.

4) Define thermal diffusivity. What is its physical significance?

5) How bound water is thermodynamically different from pure water.

6) Distinguish between absolute humidity and relative humidity.

7) Define dielectric loss factor.

8) Distinguish between work of cohesion and work of adhesion.

9) What is the basic difference between spectrophotometer and colorimeter?

10) What are thixotropic fluids? Give examples.

SECTION-B

11) a) Explain various techniques to measure the porosity of food materials.

b) What do you understand by Newtonian and non-Newtonian liquid foods? Explain with the help of suitable examples.

12) Elaborate different methods used for the measurement of thermal conductivity of a food product.

13) Define dielectric constant of a food. Describe cavity perturbation technique for the measurement of dielectric property.

14) What is contact angle? Discuss contact angle measurement techniques for the evaluation of surface properties.

15) Which are the instruments used in food industry to find the color of food? Describe any one in detail.

SECTION-C

16) Distinguish between time dependent and time independent fluids. Explain the flow behaviour of power law fluids using stress strain diagram. Give mathematical expressions and suitable examples for each type.

17) Describe a psychrometric chart. Explain the use of this chart for measuring various humid properties of air.

18) a) Describe the use of dielectric characteristics to study the changes in food composition during processing and storage?

b) Explain surface tension in solid liquid food matrix. What is the importance of surface tension characterization in foods and packaging products?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.