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Roll No

Total No. of Questions: 18

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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.



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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.

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