Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14FP2016** | **Duration :** | **3hrs** |
| **Sub. Name :** | **PHYSICAL PROPERTIES OF FOOD MATERIALS** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain in brief about the following:   1. Bioyield 2. Rupture point 3. Poisson’s ratio 4. Bulk modulus | CO2 | 10 |
| b. | Illustrate the construction and working of any one tube type viscometer. | CO2 | 10 |
| (OR) | | | | |
| 2. | a. | Describe the working of Farinograph and Amylograph in dough testing. | CO3 | 10 |
| b. | Explain in detail about Texture Profile Analysis. | CO1 | 10 |
| 3. | a. | Derive an expression for thermal conductivity of food using Fourier’s law . | CO2 | 7 |
| b. | Describe the method for estimation of thermal conductivity by Heat of vaporization. | CO1 | 8 |
| c. | Write a note on thermal diffusivity. | CO1 | 5 |
| (OR) | | | | |
| 4. |  | Explain in detail about various prediction models for thermal conductivity measurement of food materials. | CO2 | 20 |
| 5. | a. | Explain in detail about the role of water activity in shelf life of food materials | CO2 | 10 |
| b. | Explain the application of the following laws in sorption isotherms   1. Raoult’s law 2. Henry’s law | CO3 | 10 |
| (OR) | | | | |
| 6. | a. | Describe with a neat sketch the Water Activity Determination by Vapor Pressure Measurement method. | CO3 | 10 |
| b. | Describe with a neat sketch the Water Activity Determination by Hygrometer. | CO1 | 10 |
| 7. | a. | Give the basic principle of microwave heating. | CO1 | 15 |
| b. | Estimate the penetration depth of a chicken meat during processing in home type microwave oven. Chicken meat has a dielectric constant of 53.2 and dielectric loss factor of 18.1. Assume that dielectric properties are constant during heating. | CO2 | 5 |
| (OR) | | | | |
| 8. |  | Describe the influence of moisture over Dielectric constant and Dielectric loss factor. | CO3 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Describe with neat sketches the method of determination of Volume and Density of :   1. Vegetables 2. Fruits 3. Cans of juices. | CO2 | 15 |
| b. | Write a note of application of shapes ans size of fruites and vegetables in food industries | CO2 | 5 |

ALL THE BEST