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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **18FP3018** | **Duration :** | **3hrs** |
| **Sub. Name :** | **EMERGING TRENDS IN FOOD PROCESS ENGINEERING** | **Max. Marks :** | **100** |

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **outcomes** | **Marks** |
| **ANSWER ANY FIVE QUESTIONS (5 x 16 = 80 Marks)** | | | | |
| 1. |  | Outline the various hurdles used in preservation of different types of food products. | CO2 | 16 |
|  |  |  |  |  |
| 2. | a. | Interpret the various microbial inactivation mechanisms used in Pulsed Light Voltage and UV Light with a diagram. | CO5 | 8 |
| b. | Demonstrate the equipment used in the high voltage pulsed light treatment and listout the applications of the process. | CO2 | 8 |
|  |  |  |  |  |
| 3. |  | Compare the conventional and microwave heating and explain in detail about the principle, construction, working and apllications of microwae processing of foods. | CO4 | 16 |
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| 4. | a. | Explain the different types of ultrasonic equipments and describe them. | CO5 | 8 |
| b. | Appraise the construction and working of HPP treatment chamber with the support of diagram. | CO5 | 8 |
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| 5. |  | Develop a processing treatment that uses ionizing radiation as a prime source for food preservation and propose the process in detail. | CO3 | 16 |
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| 6. | a. | Identify the effect of irradiation on the nutritional and biochemical changes on foods. | CO3 | 8 |
| b. | List out the various applications of electron beam radiation in food processing. | CO1 | 8 |
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| 7. | a. | Show that the cold plasma technology is an emerging non thermal method. | CO1 | 8 |
| b. | Define the following process elaborately :  i. Thermosonication,  ii. Manosonication and  iii. Thermomanosonication. | CO1 | 8 |
|  | | **COMPULSORY QUESTION (1 x 20 = 20 Marks)** |  |  |
| 8. |  | Elaborate the role of e-nose and e-tongue in sensory evaluation of foods. | CO6 | 20 |