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## M.Tech. (Food Tech.) (2018 Batch) (Sem.-2) ADVANCED FOOD PROCESSING TECHNOLOGY

Subject Code: MTFT-521-18 M.Code: 76121

Time: 3 Hrs. Max. Marks: 60

## **INSTRUCTIONS TO CANDIDATES:**

- 1. Attempt any FIVE questions out of EIGHT questions.
- 2. Each question carries TWELVE marks.
- Q1. a) Classify membrane driven separation processes. Explain the principle and technology of ultrafiltration process. Mention its applications in food processing.
  - b) Distinguish between ionizing and non-ionizing radiations. Explain different radiation sources that can be used in food irradiation.
- Q2. a) Differentiate micro filtration, ultrafiltration, nano filtration and reverse osmosis based on operating pressure, separation range and pore size of membranes.
  - b) What are the prescribed doses of irradiations for various applications in food preservation? Explain the nutritional and microbiological changes in irradiated foods.
- Q3. a) Discuss the important properties of near critical fluids.
  - b) What is the principle of magnetron? Explain the application of microwave heating in sterilization and finish drying of food.
- O4. Write notes on:
  - a) Experimental techniques used in NCF extraction
  - b) Effect of ultrasound on the properties of food
  - c) Principle and applications of Ohmic heating in food processing
- Q5. a) Explain the mechanism of high pressure processing. Elaborate the effect of high pressure on nutritional and microbiological quality of food.
  - b) Discuss the important processing parameters in pulsed electric field technology. Also explain various process models for liquid food processing using PEF.

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- Q6. Write notes on:
  - a) Oscillating magnetic field.
  - b) Enzymatic inactivation by pulsed electric field.
  - c) Microbiological and chemical safety of PEF foods.
- Q7. a) Write a note on the different chemical and biochemical hurdles used in food processing.
  - b) Describe the principles and mechanism of nanotechnology in food processing.
- Q8. Write notes on mechanism and applications of the following advanced techniques in food processing:
  - a) High intensity light.
  - b) Combined microwave vacuum drying.

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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