

M.TECH. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING FIRST YEAR FIRST SEMESTER EXAM 2025

ADVANCED FOOD TECHNOLOGY

Time : Three hours

Full Marks: 100

Part – II(50 Marks)

Answer 1 and 2 and any one from the rest

- 1 Can you produce cold plasma with the help of UV ray-Explain. Discuss one cold plasma producing process other than UV. What are the advantage and disadvantage of cold plasma application in Food? 7+6+7=20
- 2 How plasma can be useful for drying process. What is the advantage of microwave heating process? How can you develop a microwave sterilization process- discuss with challenge. 7+7+6=20
- 3 How RF methods is beneficial for food processing sector? Discuss the use of plasma in packaging industry. 5+5=10
- 4 What are the difference of conventional heating process and ohmic heating process? What are the factors which affects the ohmic heating process? 5+5=10

[Turn over

Ex/PG/FTBE/T/111A/2025

M.TECH (FTBE) FIRST YEAR, FIRST SEMESTER EXAM 2025

ADVANCED FOOD TECHNOLOGY

PART - II (50 MARKS)

Answer Q1 and any Two from the rest

Q1. Describe the following (any 2): **2 × 10 = 20**

- a. SEM and AFM analyses of a fat-rich food of your choice
- b. Signals generated due to interaction between high energy electrons and specimens which are utilized in designing a scanning electron microscope
- c. Non-thermal methods of combating food allergens

Q2. Illustrate with the aid of flow sheets and diagrams (any 3): **3 × 5 = 15**

- a. Classification of wastes from a vegetable processing industry such as for an orange juice canning plant
- b. Use of fractal analysis in manufacture of instant soluble coffee
- c. Process of production of minimally processed cabbage slaw (starting material for sauerkraut production)
- d. A wet bag-direct compression HPP unit

Q3. Write short notes on (any 3): **3 × 5 = 15**

- a. Confocal microscopy in food microbiology
- b. Electron gun
- c. EDAX
- d. Key elements of waste management and waste minimization

Q4. Distinguish between (any 3): **3 × 5 = 15**

- a. HPP of Mushrooms. vs. Potatoes
- b. Significance of food allergen Families vs. Superfamilies in
- c. Conventional fixation methods vs. Modified fixation methods for processed food samples
- d. Food allergen Screening vs. Specific analysis