

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: IMSc.  
BRANCH: FOOD TECHNOLOGY**

**SEMESTER: VIII  
SESSION: SP/2025**

**SUBJECT: FT410 NOVEL TECHNIQUES IN FOOD PROCESSING & PACKAGING**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
- 

		CO	BL
Q.1(a)	Define the term 'sterilisation' and describe its effects on microorganism, enzyme, texture and nutritional composition.	[5] 2	1
Q.1(b)	Discuss the non-thermal processing of food and describe the high-pressure processing (HPP) and irradiation process with the line diagrams.	[5] 1	2
Q.2(a)	Explore the advantages of thermal Novel techniques and illustrate the microwave processing.	[5] 4	3
Q.2(b)	Explain the process of OHMIC Heating and its effects on microbial, sensory and textural quality of food.	[5] 5	4
Q.3(a)	Summarise the membrane separation techniques and explain the various membrane modules.	[5] 4	5
Q.3(b)	Explain the process of RO, UF and Microfiltration.	[5] 1	4
Q.4(a)	Justify the advancements made in the drying process and the effects of process parameters on dried food quality.	[5] 4	5
Q.4(b)	Describe the term 'Extrusion' and write the advantages and disadvantages of different types of food extrusion.	[5] 2	2
Q.5(a)	Explain the types of packaging and packaging materials with their properties for the packaging of processed food products.	[5] 3	5
Q.5(b)	Illustrate the antimicrobial food packaging.	[5] 1	4

:::25/04/2025:::E