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

CLASS: IMSc/PRE-PHD **SEMESTER : VIII/I**
BRANCH: FOOD TECHNOLOGY **SESSION : SP/2024**

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)	With suitable diagram differentiate between Pulsed Electric Field processing and ohmic heating. Explain High Pressure Processing	[5]	1	2
Q.1(b)	Differentiate between spoiled food and poisoned food. Recall fluence rate, fluence dose and pulse repetition rate.	[5]	3	1
Q.2(a)	Explain principle of microwave, Induction, and Radiofrequency heating. Can they able to inactivate microorganism. Explain	[5]	2	2
Q.2(b)	Describe Sous Vide processing? Explain the principle of ultrasonic extractions.	[5]	3	2
Q.3(a)	Explain RO, UF, Microfiltration process. Illustrate the key components governing performance of membrane Separation.	[5]	2	2
Q.3(b)	Explain the Principle of microwave drying. Explain about microwave vacuum dryer and reason behind its better performance.	[5]	3	3
Q.4(a)	Explain the extrusion process with a schematic diagram. Describe the differences between single screws and double screw extruder.	[5]	2	4
Q.4(b)	Differentiate between freeze drying over traditional thermal drying. Differentiate between Radurization, Radicidation Radappertization .	[5]	4	2
Q.5(a)	Explain scavenging activity in food packaging and storage? Explain about the CO2, Ethylene, O2 scavengers used in food packaging and storage.	[5]	1	2
Q.5(b)	Explain the principle of antimicrobial packaging? Justify the application of vapor phase antimicrobial activity for shelf-life extension of perishable items.	[5]	5	5

::::::23/04/2024::::::E