

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

CLASS: IMSc.
BRANCH: FOOD TECHNOLOGY

SEMESTER: VIII
SESSION: SP/2025

SUBJECT: FT424 POST HARVEST ENGINEERING

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 handbook/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a)	Define the terms 'post-harvest system' and 'post-harvest engineering'. Make a clear flow diagram of various post-harvest activities for agro-produce.	[5] 1	1
Q.1(b)	Explain the various post-harvest operations like (i) Harvesting, (ii) Grading, (iii) Storage, (iv) Size Reduction and (v) Extraction.	[5] 1	2
Q.2(a)	Classify the food based on perishability, write about the causes of spoilage in storage, and control measures.	[5] 4	3
Q.2(b)	Calculate the Btu required to lower the temperature of 2500 lbs of peas from 0°F to 30°F, and finally to storage given at a temperature of 0°F. Given $S_l = 0.8$, $H_r = 108$, $S_s = 0.43$.	[5] 2	3
Q.3(a)	Explain any two procedures (one from the direct method and one from the indirect method) for the determination of the moisture content of food.	[5] 3	4
Q.3(b)	Describe the principles of drying and factors affecting drying.	[5] 3	1
Q.4(a)	Explain the importance and general principles of storage.	[5] 2	4
Q.4(b)	Discuss the influence of moisture content, relative humidity, temperature and fungi on stored products.	[5] 5	2
Q.5(a)	Describe the post-harvest treatment to increase the shelf life of fruits and vegetables.	[5] 5	2
Q.5(b)	Summarize the modified atmosphere packaging (MAP) and its effects on the shelf life of food products.	[5] 3	1

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