

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

**CLASS: IMSC. /PRE-PHD  
BRANCH: FOOD TECHNOLOGY**

**SEMESTER : VIII/ Pre-PhD  
SESSION : SP/2024**

**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 hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Explain the post-harvest operations involved in handling of agricultural produce. Explain the post-harvest losses in different stages of cereal processing.	[5] 1	2
Q.1(b)	Describe the current status of production and post-harvest losses of agricultural produce. Differentiate between Conveying and Elevating.	[5] 1	1
Q.2(a)	Describe the influence of moisture content, relative humidity, temperature on the cereal and pulse storage?	[5] 2	1
Q.2(b)	Describe the importance of air movement in side storage structure? Differentiate between dip bin and shallow bin?	[5] 4	2
Q.3(a)	Differentiate free moisture and bound moisture? Describe the difference between the drying rate curve observed during drying of rice and sand in a static dryer at 50 °C.	[5] 2	2
Q.3(b)	Explain hysteresis curve with ink bottle theory. 500 kg paddy at 22% moisture content (wb) is dried to 14% moisture content (wb). Calculate the amount of moisture removed.	[5] 3	3
Q.4(a)	Illustrate the need and importance of food grain storage and the general principles of food grain storage. Explain the Types and causes of spoilage occur during storage?	[5] 2	2
Q.4(b)	Describe the role of temperature and moisture in storage environment and explain how it is related with the infection and stored grains?	[5] 2	4
Q.5(a)	Can you elaborate on the methods of harvesting of fruits and vegetables and the reasons of post-harvest losses of fruits and vegetables?	[5] 5	6
Q.5(b)	Explain the functions of packaging? Explain the term 'modified atmosphere packaging' and 'the post-harvest treatments' that are needed to increase the storage life of fresh fruits and vegetables.	[5] 5	5

:::25/04/2024:::E