CLASS : IMSC	SEMESTER: VIII
BRANCH : FOOD TECHNOLOGY	SESSION: SP/2022
SUBJECT: FT424 – Post Harvest Engineering	
TIME : 2 HOURS	FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains (PART A) multiple choice questions & short answer of 30 marks.
2. The question paper also contains (PART B) 5 short answer questions each of 05 marks and candidates may attempt any 4 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. For MCQ, student should write full sentence instead question number and answer code.

PART A (Short answer) (any 10)

Q1.	What do you understand by cleaning, grading and sorting?	[2]
Q2.	What five important physico-mechanical properties of crop material and the contaminants are used to clean and grade grains?	[2]
Q3.	What is roundness and sphericity and how they are determined.	(2)
Q4.	What are scrubbers? What is active and passive scrubbing?	(2)
Q5.	Discuss Control Atmosphere Structure. What are the benefits of CAS?	(2)
Q6.	What is plane of Rupture and Angle of Rupture?	(2)
Q7.	What is deep and shallow bins?	(2)
Q8.	What are the sources of infestation in grain?	[2]
Q9.	Write the working principle of LSU dryer	[2]
Q10.	200kg of paddy is to be dried from 20% MC (w.b.) to be dried to 10% (w.b.). Cal the weight of water removed in drying.	[2]
Q11.	Differentiate between dry and wet basis moisture content	[2]

PART B (any 6)

Q1.	In paddy cleaner 100g samples were taken each from input and output grain and analysed. The following observations were made: Weight of clean grain in input – 90g; Weight of clean grain in clean grain output – 98g; Weight of clean grain in foreign material output – 5g; Calculate the cleaning efficiency. What is Kick law in size reduction process?	[5]
Q2.	What are various sources causing spoilage in the stored food? Discuss spoilage due to mechanical damage?	[5]
Q3.	What is cooling load? 100 kg of poultry is to be cooled from 25 to 5 ºC thereafter it is further cooled and frozen to -20ºC. Specific heat of poultry is 3.21 kJ/kg/ºC and below freezing point is 1.71 kJ/kg/ºC. Freezing point of poultry is -2.8ºC and latent heat of fusion is 246.8 kJ/kg. Calculate the total heat load.	[5]
Q4.	What is drying rate? Draw drying curve and discuss constant and falling rate period.	[5]
Q5.	What is Bunker Storage? Draw a schematic diagram of Bunker Storage	[5]
Q6.	What is Absolute Humidity, Humidity, percentage Humidity and Relative Humidity?	[5]
Q7.	What is head rice yield? Differentiate between husking, milling and polishing?	[5]
Q 8	Explain fruits and vegetable as living cell. Explain the methodologies to be adopted to restrict moisture loss from the produce?	[5]