


Name:			
Enrolment No:			
UPES			
End Semester Examination, December 2024			
Course: Post-Harvest Engineering		Semester: III	
Program: B.Tech. Food Technology		Duration: 3 Hours	
Course Code: HSFT2001		Max. Marks: 100	
Instructions:			
Section A			
S. No.	Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q1	The de-husking process is _____.	1.5	CO4
Q2	What is removed during polishing? a) Husk and bran b) Germ and bran c) Bran and endosperm d) Endosperm and husk	1.5	CO4
Q3	Parboiling of paddy is done to a) Achieve maximum recovery of head rice b) Minimise the broken percentage c) Reduce the milling losses d) All are correct	1.5	CO4
Q4	The removal of a few large particles in an initial process is: a) Scalping b) Cleaning c) Grading d) Sorting	1.5	CO3
Q5	Indented cylinder separator separates the grains based on: a) Weight b) Relative length c) Length d) All are correct	1.5	CO3
Q6	Which of the following dryer is used to produce powder from the solution? a) Spray dryer b) Cabinet tray dryer c) Pneumatic dryer d) Fluidized bed dryer	1.5	CO5
Q7	What is the full form of the LSU dryer? a) Louisiana State University dryer b) Low simple universal dryer c) Low and slow unit dryer d) Level steady unit dryer	1.5	CO5

Q8	Evaporation, desiccation, and dehydration all mean the same thing. a) True b) False	1.5	CO5
Q9	Which of the following is an advantage/use of dried food items? a) Lesser cost and minimum labor required b) Limited processing equipment and minimum food storage requirements c) Reduction in distribution costs d) All of the mentioned	1.5	CO5
Q10	Which of the following dryer is the convection drying equipment with enclosed insulated chambers? a) Fluidized bed dryer b) Drum dryer c) Cabinet tray dryer d) Pneumatic dryer	1.5	CO5
Q11	Chilling injuries arising from the exposure of the products to a temperature a) above the normal physiological range b) below the normal physiological range c) under poor ventilation condition d) in CA storage	1.5	CO1
Q12	Fresh fruits, and vegetables such as apples, oranges and carrots, keep the best at a temperature a) below freezing b) above freezing c) at freezing d) 20°C	1.5	CO1
Q13	The enzyme that is responsible for the browning of fruit and vegetables is a) Lipo-oxidase b) Polyphenol-oxidase c) Amylase d) Protease	1.5	CO1
Q14	The basic difference between food wastage and food spoilage is _____.	1.5	CO6
Q15	The significance of screen effectiveness is _____.	1.5	CO4
Q16	The full form of EMC is _____.	1.5	CO6
Q17	The standard method for moisture content estimation is _____.	1.5	CO6
Q18	What is meant by postharvest losses? a) Measurable quantitative and qualitative loss b) Measurable qualitative loss c) Measurable quantitative loss d) Measurable microbial loss	1.5	CO6
Q19	What is a quantitative loss? a) Loss in terms of physical substance b) Loss in terms of chemical substance c) Loss in terms of microbial spoilage d) Loss in terms of physical, chemical substance and microbial spoilage	1.5	CO4

Q20	What is the main objective of fresh fruit and vegetable storage? a) Minimize deterioration b) Extend the shelf life c) Profits d) Minimize deterioration and extend the shelf life	1.5	CO4
Section B (Attempt any 4 questions) (4Qx5M=20 Marks)			
Q 1	What are post-harvest losses? List down reasons for losses and the importance of loss reduction.	5	CO2
Q 2	List down the different criteria for classification of dryers.	5	CO5
Q 3	Differentiate between drying and dehydration. Describe in brief the techniques for moisture content determination.	5	CO2
Q 4	Describe in detail the various factors responsible for spoilage of grains.	5	CO1
Q 5	What are the different moisture content estimation methods?	5	CO2
Section C (2Qx15M=30 Marks)			
Q 1	Mina bought some rice from a local dealer, but the rice had a lot of different-sized grains and dust. Her friend Tina said that it is because it is not dried and packed properly. Is she right? (2 marks) a) True b) False List out various post-harvest methods that should be used for paddy. (3 marks) Also, describe the concepts of screen efficiency and screen effectiveness (10 marks)	15	CO4
Q 2	Sunil owns a food processing unit, and it produces dried seed mix as its final product. Also, he wants to add a processing line for milk powder. Answer the following questions: a) Describe the principle and working of 2 dryers he may be using for the production of dried seed mix. (10 marks) b) Suggest and describe in detail the most suitable dryer for the milk powder processing line. (5 marks)	15	CO5
Section D (2Qx10M=20 Marks)			
Q 1	What is grading? Describe different characteristics on which the grade factors depend. (4 Marks + 6 Marks)	10	CO4
Q 2	Differentiate between different heat transfer modes. What is the importance of moisture content in post-harvest management operations of food commodities? (4 Marks + 6 Marks)	10	CO6