

Name:			
Enrolment No:			
<b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b> <b>End Semester Examination, December 2022</b>			
Course: Post-Harvest Engineering		Semester: III	
Program: B.Tech. Food Tech.		Duration: 3 Hours	
Course Code: HSFT 2001		Max. Marks: 100	
Instructions:			
S. No.	Section A	Marks	COs
	<b>Short answer questions/ MCQ/T&amp;F</b> <b>(20Qx1.5M= 30 Marks)</b>		
Q1	What is de-husking? a) Improving the quality of husk b) Removing the husk c) Reducing the quality of husk d) Removing bran but the husk	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 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 on the basis of: 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	1.5	CO5

	<ul style="list-style-type: none"> <li>b) Cabinet tray dryer</li> <li>c) Pneumatic dryer</li> <li>d) Fluidized bed dryer</li> </ul>		
Q7	<p>What is full form of LSU dryer?</p> <ul style="list-style-type: none"> <li>a) Louisiana State University dryer</li> <li>b) Low simple universal dryer</li> <li>c) Low and slow unit dryer</li> <li>d) Level steady unit dryer</li> </ul>	1.5	CO5
Q8	<p>Evaporation, desiccation, and dehydration all mean the same thing.</p> <ul style="list-style-type: none"> <li>a) True</li> <li>b) False</li> </ul>	1.5	CO5
Q9	<p>Which of the following is an advantage/use of dried food items?</p> <ul style="list-style-type: none"> <li>a) Lesser cost and minimum labor required</li> <li>b) Limited processing equipment and minimum food storage requirements</li> <li>c) Reduction in distribution costs</li> <li>d) All of the mentioned</li> </ul>	1.5	CO5
Q10	<p>Which of the following dryer is the convectional drying equipment with enclosed insulated chambers?</p> <ul style="list-style-type: none"> <li>a) Fluidized bed dryer</li> <li>b) Drum dryer</li> <li>c) Cabinet tray dryer</li> <li>d) Pneumatic dryer</li> </ul>	1.5	CO5
Q11	<p>Chilling injuries arising from the exposure of the products to a temperature</p> <ul style="list-style-type: none"> <li>a) above the normal physiological range</li> <li>b) below the normal physiological range</li> <li>c) under poor ventilation condition</li> <li>d) in CA storage</li> </ul>	1.5	CO1
Q12	<p>Fresh fruits, and vegetables as apples, oranges and carrots, keep best at temperature</p> <ul style="list-style-type: none"> <li>a) below freezing</li> <li>b) above freezing</li> <li>c) at freezing</li> <li>d) 20°C</li> </ul>	1.5	CO1
Q13	<p>The enzyme which is responsible for browning of fruit and vegetables is</p> <ul style="list-style-type: none"> <li>a) Lipo-oxidase</li> <li>b) Polyphenol-oxidase</li> <li>c) Amylase</li> </ul>	1.5	CO1

	d) Protease		
Q14	Statement 1: Belt conveyors cannot be used in the inclined position. Statement 2: Screw conveyors can carry more amount of load compared to belt conveyors. a) True, False b) True, True c) False, False d) False, True	1.5	CO6
Q15	Which of the following is NOT a step in Modern Milling of Wheat? a) Stone Grinding b) Wheat Conditioning c) Wheat milling d) Cleaning	1.5	CO4
Q16	Which of the following application is a belt conveyor used for? a) Material transportation over long distances b) Material transportation within premises c) Material transportation for processing d) All of the mentioned	1.5	CO6
Q17	Pneumatic conveying is done under which of the mentioned conditions? a) High pressure b) Vacuum c) Fluidization d) Any of the mentioned	1.5	CO6
Q18	What is the flow rate of materials in a bucket conveyor dependent on? a) Shape of the buckets b) Spacing of the buckets c) Speed of the conveyor d) All of the mentioned	1.5	CO6
Q19	Statement 1: During de-hulling of rice, shearing action is used. Statement 2: During milling of rice, the rice kernel is subjected to rubbing action. a) True, False b) True, True c) False, False d) False, True	1.5	CO4
Q20	Which of the following is NOT a step in the process involved in dry milling of maize?	1.5	CO4

	a) Degermination b) Sifting c) Removal of moisture d) Diluting		
<b>Section B</b> <b>(4Qx5M=20 Marks)</b>			
Q 1	What are post-harvest losses? List down reasons for losses and importance of loss reduction	5	CO2
Q 2	List down the different criterion 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	What is decortication and describe the working of groundnut decorticator.	5	CO1
<b>Section C</b> <b>(2Qx15M=30 Marks)</b>			
Q 1	Mina bought some rice from a local dealer, but the rice had gone rancid. Her friend Tina said that it is because it is unpolished. Is she right? <b>(2 marks)</b> a) True b) False List out various cooking quality parameters for rice. <b>(3 marks)</b> Also describe the dry milling and wet milling process with flow charts <b>(10 marks)</b>	15	CO4
Q 2	Sunil owns a fruit and vegetable processing unit, and it produces fruit chips as its final product. Also, he wants to add a processing line for milk powder. Answer the following questions: a) Describe principle and working of 2 dryers he may be using for production of fruit chips. <b>(10 marks)</b> b) Suggest and describe in detail the most suitable dryer for milk powder processing line. <b>(5 marks)</b>	15	CO5
<b>Section D</b> <b>(2Qx10M=20 Marks)</b>			
Q 1	What is purpose of using separators? Describe the following: a) Magnetic separator b) Pneumatic separator c) Electrostatic separator d) Destoners	10	CO4
Q 2	Describe the working principle of screw conveyor and pneumatic conveyor with its advantages and disadvantages	10	CO6