UPES

End Semester Examination, May 2024

Course: Cereal, Pulse and Oilseed Technology   **Semester** : IV

Program: B. Tech (Food Technology)   **Duration** : 3 Hours

Course Code: HSFT2008   **Max. Marks: 100**

Instructions: Read all the questions carefully and attend.

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q1	Which of the following is NOT an operation involved in wheat milling process? (a) Extrusion (b) Cleaning (c) Conditioning (d) Milling	1.5	CO 1
Q2	The grinding process in flour milling is classified into two-break system and reduction system. (a) True (b) False	1.5	CO 1
Q3	Which of the following dryer is used in batch method of rice parboiling? (a) Solar dryer (b) Tray dryer (c) LSU dryer (d) Rotary dryer	1.5	CO 1
Q4	Identify the correct process used in parboiling wheat. (a) Soaking, Steaming, Drying, Milling (b) Steaming, Soaking, Drying, Milling (c) Steaming, Soaking, Milling, Drying (d) Soaking, Steaming, Milling, Drying	1.5	CO 1
Q5	Which of the following chemical is used for steeping process of corn wet milling?	1.5	CO 1

	(a) CO_2 (b) SO_2 (c) $NaCl_2$ (d) None of the above		

Q6	Whizzer is used for _____ purpose.
	   (a) Cleaning
	   (b) Drying
	   (c) Conditioning
	   (d) None of the above
		1.5	CO 1

Q7	The optimum moisture content for degerming in the Beall Degermer is _____%.
	   (a) 10-20%
	   (b) 21-25%
	   (c) 30-35%
	   (d) 40-45%
		1.5	CO 2

Q8	During drying of parboiled rice, at a constant air temperature, the rate of drying _____ as the thickness of grain _____.
	   (a) decreases, increases
	   (b) decreases, decreases
	   (c) increases, increases
	   (d) increases, decreases
		1.5	CO 2

Q9	Which of the following step is not included in the pulse milling?
	   (a) Loosening of husk
	   (b) Parboiling
	   (c) De-husking
	   (d) Splitting of pulses
		1.5	CO 2

Q10	The cooked wheat is treated with NaOH solution in Lye treatment. (True/False)	1.5	CO 2
Q11	State the objectives of modern wheat flour milling.	1.5	CO 2
Q12	Name the full form of T.D. method of corn dry milling.	1.5	CO 2
Q13	Why is steeping required in corn wet milling?	1.5	CO 2
Q14	Which device is used to measure the breakage of pulse seed coat?	1.5	CO 3
Q15	Name some antinutritional factors present in pulses. (At least 3)	1.5	CO 3

Q16	Moisture content of pulses during harvesting is _____% and storage is _____%.	1.5	CO 3
Q17	State the objectives of milling of pulses.	1.5	CO 3
Q18	_____ equipment is used for mixing _____ edible oil in pulses during pretreatment.	1.5	CO 3
Q19	Differentiate between dehulling and splitting.	1.5	CO 3
Q20	Name some value-added products obtained from cereal and pulses. (At least 2 from each)	1.5	CO 3
Section B **(4Qx5M=20 Marks)**			
Q1	What is the use of break sifting system and reduction sifting system in a wheat mill?	5	CO 1
Q2	Draw the flow chart for modern wheat flour milling process.	5	CO 2
Q3	(a) Enlist the types of pulse milling method (2.5 marks) (b) Mention the dhal yield achieved in each milling method. (2.5 marks)	5	CO 3
Q4	(a) What is pitting? (2 marks) (b) Discuss the process of pitting of pulses in emery coated roller. (3 marks)	5	CO 3
Section C **(2Qx15M=30 Marks)**			
Q1	Discuss the Pulse milling method followed for Pigeon Pea processing with a net flow diagram. (Any 3 of the followings × 5 marks) (a) Jabalpur method (b) CFTRI method (c) CIAE method (d) Pantnagar method	15	CO 4
Q2	Briefly discuss the working operation of the following dehulling and cleaning machines used in pulse milling. (Each of the followings × 5 marks) (a) Roller dehusker (b) Burr mill	15	CO 5

	(c) Reciprocating air screen cleaner		
	Section D **(2Qx10M=20 Marks)**		

Q1	Problem: In chickpea milling experiment with a concentric abrasive cylinder will have the following observations:
	    (i) Amount of hulled grains = 2.5%
	    (ii) Recovery of whole split kernels after milling = 71.4%
	    (iii) Amount of crushed kernels = 3.6%
	    (iv) Amount of powder generated = 11%
	    (v) Amount of husk removed = 11.5%
	 The cotyledon to grain ratio of the grains was 86.5.
	    (a) Calculate the overall milling efficiency of the system. (5 marks)
	    (b) Calculate the milling efficiency by using Kupritz formula also. (5 marks)
		10	CO 4

Q2	(a) Explain the structure of pulses with a net sketch figure. (5 marks) (b) Discuss the nutritional composition and health benefits of pulses. (5 marks)	10	CO 5