Total number of printed pages: 03 **Programme (UG)/IV/UFET 402**

2023

CERELAS AND LEGUMES PROCESSING TECHNOLOGY

Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1. a) A quartz mixture is screened through a 28 mesh screen. The cumulative screen analysis of the feed, overflow and underflow are given in the following table and Calculate (10)

(i) the mass ratios of overflow to feed,

(ii) the mass ratios of underflow to feed, also,

(iii) Calculate the overall effectiveness of the screen.

Mesh	Dp, mm	Cumulative mass fraction greater than Dp		
		Feed	Overflow	Underflow
4	4.699	0	0	0
8	2.362	0.15	0.43	0
10	1.651	0.47	0.85	0.195
28	**0.589**	**0.94**	**1.00**	**0.91**
65	0.208	0.98	--	0.975
Pan	--	1.00	--	1.00

	b)		Explain in detail the construction and working of ball mill with neat sketches.	10
2.	a)		What do you mean by size reduction? Discuss different forces during size reduction.	10
	b)		Explain in brief the variables in screening operations.	10
3.	a)		List out the name of milling equipment's used for wheat milling.	10
	b)		What kind final products we can get from the wheat milling?	10
4	a)		Explain in details; the construction and working of rubber roll sheller with neat diagram.	10
	b)		Draw the flowchart of rice processing in modern rice mill.	10
5.	Differentiate the following (any four) In tabular format			05X04 = 20
		i)	Grizzly and Trommels	
		ii)	True density and Bulk Density	
		iii)	Jaw Crusher and Gyratory Crusher	
		iv)	Angle of repose and Angle of internal friction	
		v)	Hard wheat and Soft wheat	
		vi)	Cereals and Pulses	
6.	Write short notes on (any four)			05X04 = 20
		i)	Draw neat sketches of any two motions of screen	

		ii)	Diagram of Velvet roll Separator (only diagram)	
		iii)	Conditioning /Tempering of Wheat	
		iv)	By-products during rice processing	
		v)	Roundness Ratio	
		vi)	Variables in screening operations.	
7.	a)	Discuss/Explain different physical properties of Rice with proper notation (using symbols for representing operations).		10
	b)	Explain in detail the construction and working of Cyclone separator with neat sketches.		10