

**Total number of printed pages: 02 Programme (UG)/IV/UFET 402
2025**

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)	List the names of the equipment commonly used in rice processing, step-by-step or unit operation-wise. Describe any one of them in detail.	10
	b)	With a neat labeled diagram, explain the flowchart of modern rice milling	10
2.	a)	In sieve analysis of corn grits with respect to any particular screen opening, the mass fraction of the desired particle size in the feed, overflow and underflow stream are 0.47, 0.85 and 0.20 respectively. The feed rate of the material on the screen is 10 kg/hr. Calculate the screen effectiveness and the mass flow rate for the overflow stream	10
	b)	Explain in detail the construction and working of Cyclone Separator with neat sketches	10
3.	a)	Discuss/Explain different engineering properties of cereals with proper notation (using symbols for representing operations).	10
	b)	What do you mean by parboiling? Discuss the methods of Rice parboiling process. Write 2 advantages and 2 disadvantages of rice parboiling process.	10
4.	a)	Explain in details; the construction and working of rubber roll sheller with neat diagram.	10
	b)	Air carrying particle of density 1200 kg/m^3 and an average diameter of 25 micron enter a cyclone of 600 mm diameter at a linear velocity of 20 m/sec. Calculate the centrifugal force acting radially in the cyclone and the separation factor of the cyclone.	10
5.	Differentiate the following (any four) In tabular format		04X05 = 20
	i)	Ideal screen & actual screen	
	ii)	Hard wheat and soft wheat	
	iii)	Wet milling Vs Dry Milling of Pulses	
	iv)	Sorting and grading	
	v)	Angle of repose and Angle of internal friction	

6.	Write short notes on (any four)			04X05=] = 20
	i)	By-products during rice processing		
	ii)	List of Variables used in screening operations		
	iii)	Diagram of Disk Separator (only diagram)		
	iv)	Methods of husking		
	v)	Trommel		
7.	a)	With the help of a comparative table, differentiate between hard wheat and soft wheat based on composition, protein content, and uses.		10
	b)	Illustrate the roller milling process of wheat using a flowchart. Explain each step briefly.		10

