

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

BE./B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Third Semester

Agricultural Engineering

AI3302 – Unit Operation in Agricultural Processing

Regulations – 2021

Duration : 3 Hrs

Maximum : 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	State the law of conservation of energy.	RE	1	2
2.	Define boiling point elevation.	RE	1	2
3.	Name the two methods of filtering process.	RE	2	2
4.	Define Stokes law.	RE	2	2
5.	List out the few advantages of size reduction.	RE	3	2
6.	Which mills used to convert dried chilly into powdered chilly?	AP	3	2
7.	State the Gibbs Phase rule.	RE	4	2
8.	How does leaching was classified?	RE	4	2
9.	What is magma?	RE	5	2
10.	Mention the application of batch distillation in agricultural processing.	AP	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain the overall view of engineering process in unit operation and brief about the basic principle of mass and energy balance?	UN	1	13
	Or			
	b With neat sketch explain the following:			
	i) Short tube horizontal evaporator	UN	1	6
	ii) Short tube vertical evaporator	UN	1	7
12.	a Explain the working principle and construction of rotary drum filter and list out its advantages and disadvantages?	UN	2	13
	Or			
	b What is meant by centrifugal forces? How it is applied to agricultural food processing and explain it in briefly.	UN	2	13
13.	a Compare the crushing and grinding operation?	AN	3	13
	Or			
	b How size reduction is so important in agricultural processing and list out it applications?	AN	3	13

14.	a	With neat sketch explain any one of the gas absorption equipments?	UN	4	13
Or					
	b	Briefly discuss about the Dorr agitated extraction and thickeners with neat sketch?	UN	4	13
15.	a	Explain briefly the boiling point diagram or constant pressure vapour liquid equilibrium diagram?	UN	5	13
Or					
	b	Explain with neat sketch of Swenson – Walker crystallizer?	UN	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	Explain the rate of crystal growth and classification of crystallizers?	UN	5	15
Or					
	b	With neat layout explain the following:	UN	1	15
		a) Forward feed (5)			
		b) Backward feed (5)			
		c) Mixed feed (5)			