

Name:	
Enrolment No:	

End Semester Examination, May 2024

Program Name: B.Tech Biotechnology	Semester : IV
Course Name: Unit Operations	Time : 3 hrs
Course Code: HSCC2023	Max. Marks : 100
Nos. of page(s): 02	

S. No.	Section A: 30 Marks (Attempt all questions)	Marks	COs
Q 1	Define sphericity.	1.5 M	CO1
Q 2	List any two mechanical unit operations used for solid-fluid separation.	1.5 M	CO1
Q 3	Write the expression for determining the volume surface mean diameter of a particle.	1.5 M	CO1
Q 4	Write the expression for critical speed of a ball mill.	1.5 M	CO1
Q 5	What is cake filtration?	1.5 M	CO1
Q 6	What is the definition of screen effectiveness based on the over size.	1.5 M	CO1
Q 7	List out different modes of mass transfer.	1.5 M	CO3
Q 8	What is the driving force in mass transfer.	1.5 M	CO3
Q 9	What is the unit of molar flux?	1.5 M	CO3
Q 10	Define unbound moisture.	1.5 M	CO5
Q 11	Write the unit for rate of drying.	1.5 M	CO5
Q 12	What type of dryer is used for drying heat sensitive substances.	1.5 M	CO5
Q 13	Develop an expression to relate the moisture content on dry basis and wet basis.	1.5 M	CO5
Q 14	Define humidification.	1.5 M	CO4
Q 15	Define dry bulb temperature.	1.5 M	CO4
Q 16	Define relative humidity.	1.5 M	CO4
Q 17	Write the merits and demerits of forced draft cooling towers over induced draft cooling towers.	1.5 M	CO4
Q 18	List out various applications of air-water contacting.	1.5 M	CO4
Q 19	What is crystallization?	1.5 M	CO2
Q 20	Mention any two applications of crystallization.	1.5 M	CO2
	Section B: 20 Marks (Attempt all questions)		
Q 21	Explain the working of belt conveyor with neat diagram.	5 M	CO2
Q 22	Discuss classification of mass transfer operation in detail.	5 M	CO3
Q 23	List out various types of industrial dryers. Explain any one in detail.	5 M	CO5
Q 24	Find the sphericity of a cylinder of 2 mm diameter and 5 mm length.	5 M	CO1

