		Reg. No. :							
Question Paper Code: 55902									
B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020									
Fifth Semester									
Chemical Engineering									
15UCH502 - MASS TRANSFER - I									
(Use of Humidity Chart is permitted)									
		(Regula	tion 2015)						
Dura	ation: One hour		Ma	aximum: 30 Marks					
	PART A - (6 x 1 = 6 Marks)								
(Answer any six of the following questions)									
1.	For steady state equimination $N_A/(N_A+N_B)$ is	eady state equimolal counter diffusion of two gases A and B, the $N_A/(N_A+N_B)$ is			CO1- R				
	(a) 0	(b) 1	(c) ∞	(d)1/2					
2.	The binary diffusivity	y in gases is dependent upon		CO1-R					
	(a) the temperature		(b) the pressure						
	(c) the nature of the co								
3.	Mass Transfer co-efficient (K) and diffusivity (D) are related according to film theory as								
	(a) K∞ D	(b) K $\infty \sqrt{D}$	(c) $K\infty D^{1.5}$	(d) $K\infty D^2$					
4.	Wetted wall tower experiment determines the				CO2- R				
	(a) molal diffusivity		(b) volumetric						
	(c) mass transfer coefficient		(d) none of the						
5.	The Lewis number of a mixture is one when mass diffusivity is equal to				CO3- R				
	(a) momentum diffusiv	vity	(b) thermal diff	usivity					
	(c) thermal conductivi	ty	d) 1/ thermal di	ffusivity					

6.	The Lewis number i		CO3- R							
	(a) mass diffusivity to mass diffusivity									
	(b) thermal diffusivity to mass diffusivity									
	(c) mass diffusivity to momentum diffusivity									
	(d) momentum diffusivity to thermal diffusivity									
7.	Milk power is made	CC	04- R							
	(a) drum drier	(b) rotary drier	(c) freeze drier	d) spra	y drier					
8.	All moisture in a nor	n			CO	04- R				
	(a) bound moisture (b) free moisture (c) unbound moisture (d) equilibrium moisture									
9.	Crystal phases can be inter-converted by varying					CO5- R				
	(a) temperature	(b) pressure	(c) size	(d) vis	cosity					
10.	The size of a crystal	size of a crystal may be specified by			CC	05- R				
	(a) length	(b) sphericity	(c) particle size	(d) all	the above					
	PART – B (3 x 8= 24 Marks)									
		(Answer any thr	ee of the following ques	stions)						
11.	Obtain an expression for mass flux under steady state diffusion of liquid CO1- U (8) A through B with two cases (i) stagnant B diffusion (ii) equimolar counter diffusion.									
12.	Discuss various theories of mass transfer relating diffusivity and mass transfer coefficient and its importance in diffusion phenomena					(8)				
13.	Explain the theory of determine wet bulb of	ation to C	CO3- U	(8)						
14.	Explain the working	(CO4-U	(8)						
15.	With a help of a neat sketch explain the construction and working of a CO5- U Swenson-walker crystallizer					(8)				