University of Mumbai
Online Examination 2020

Program: BE Chemical Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VI

Course Code: CHC602

Course Name: Mass Transfer Operations II

Time: 1 hour Max. Marks: 50

Note to the students:- All Questions are compulsory and carry equal marks .

Q1.	Rayleigh's equation is applicable to------ distillation.
Option A:	Simple Distillation
Option B:	Steam distillation
Option C:	Extractive distillation
Option D:	Flash Distillation
Ans:	
Q2.	Steam distillation is applied to liquids which
Option A:	form azeotrpes
Option B:	are highly viscous
Option C:	decompose if distilled directly at atmospheric pressure
Option D:	are complex mixtures
Ans:	
Q3.	In a plate type distillation column, an ideal plate is defined as one where
Option A:	the vapour and liquid leaving streams are in equilibrium
Option B:	the vapour and liquid entering streams are in equilibrium
Option C:	the vapour leaving stream is in equilibrium with the liquid entering streams
Option D:	the vapour entering stream is in equilibrium with the liquid leaving streams
Ans:	
Q4.	The relative volatility of a binary mixture at the Azeotropic composition is
Option A:	>1
Option B:	0
Option C:	∞

Option D:	1
Ans:	
Q5.	Separation of two volatile liquids by distillation makes use of their
Option A:	Selectivity
Option B:	relative volatility
Option C:	density difference
Option D:	Solubility
Ans:	
Q6.	Raoult's law is applicable to the
Option A:	Real solutions
Option B:	Non-ideal gases
Option C:	Ideal solutions
Option D:	solid mixtures
Ans:	
Q7.	Entrainer used in Azeotropic distillation should
Option A:	Form a low boiling azeotrope with one of the constituents of the mixture
Option B:	Form a new azeotrope of low relative volatility with one of the constituents of the mixture
Option C:	Have high latent heat of vaporization
Option D:	Have high viscosity to provide high tray efficiency
Ans:	
Q8.	Flash vaporization is a
Option A:	Differential distillation
Option B:	Steam distillation
Option C:	Azeotropic distillation
Option D:	Equilibrium distillation
Ans:	
Q9.	The raffinate phase is extraction is
Option A:	The solvent rich phase
Option B:	The original solution from which solute has been recovered.
Option C:	The solvent phase separated from the extract phase
Option D:	The solute separated from the extract phase.
Ans:	
Q10.	The distribution coefficient is defined as
Option A:	Product of concentration in extract phase and concentration in raffinate phase
Option B:	Ratio of concentration in raffinate phase to concentration in extract phase
Option C:	Ratio of concentration in extract phase to concentration in raffinate phase
Option D:	Difference in concentration of extract and raffinate phase
Ans:	

Q11.	Larger value of the distribution coefficient
Option A:	More is the solvent required
Option B:	No solvent is required
Option C:	There is no effect of the amount of solvent used
Option D:	Less is the solvent
Ans:	
Q12.	In liquid extract, the liquid with which the feed solution is contacted is called as
Option A:	Entrainer
Option B:	Reflux
Option C:	Solvent
Option D:	Solute
Ans:	
Q13.	In cross-current liquid-liquid extraction
Option A:	The Solvent enter the first stage.
Option B:	Fresh solvent is added to each stage
Option C:	The solvent enters the last stage
Option D:	The solvent is added to alternate stage
Ans:	
Q14.	Perfumes from flowers can be obtained by
Option A:	Drying
Option B:	Adsorption
Option C:	Crystallization
Option D:	Leaching
Ans:	
Q15.	Example for Leaching equipment
Option A:	Ion exchanger
Option B:	Plate Column
Option C:	Bollmann Extractor
Option D:	Sparged Column
Ans:	
Q16.	For better Leaching, the viscosity of the solvent should be
Option A:	High
Option B:	Less
Option C:	Equal to feed mixture
Option D:	Negligible
Ans:	
Q17.	In chemical adsorption, how many layers are adsorbed
Option A:	One

Option B:	Two
Option C:	Many
Option D:	Zero
Ans:	
Q18.	Which is favourable for physical adsorption?
Option A:	High T and high P
Option B:	High T and low P
Option C:	Low T and high P
Option D:	T and P do not affect
Ans:	
Q19.	Breakpoint time
Option A:	increases with decrease in bed height
Option B:	decreases with decreases bed height
Option C:	not affected by bed height
Option D:	first increases and then decreases with bed height
Ans:	
Q20.	In adsorption of oxalic acid on activated charcoal, the activated charcoal is known as---------
Option A:	Adsorbent
Option B:	Absorbate
Option C:	Adsorber
Option D:	Absorber
Ans:	
Q21.	At room temperature, the impure compound in crystallization is -------
Option A:	Soluble
Option B:	Sparingly soluble
Option C:	Insoluble
Option D:	Forming precipitate
Ans:	
Q22.	One of the most common solvent used in crystallization are --------
Option A:	Water
Option B:	Alcohol
Option C:	Normal saline
Option D:	Sulphuric acid
Ans:	
Q23.	Which of the following is not an application of transport in membranes?
Option A:	Microfiltration
Option B:	Reverse osmosis
Option C:	Dialysis

Option D:	Fractional distillation
Ans:	
Q24.	Which of the following is not true about membrane separations?
Option A:	Components which are passed through the membrane is called permeate
Option B:	Components which are not passed through are called retentate
Option C:	Non-porous membrane is never used
Option D:	Membrane separations require a driving force
Ans:	
Q25.	What is the driving force in Microfiltration?
Option A:	Pressure difference
Option B:	Temperature difference
Option C:	Concentration difference
Option D:	Fugacity difference
Ans:	

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D'
Q1.	A
Q2.	C
Q3.	A
Q4	D
Q5	B
Q6	C
Q7	A
Q8.	D
Q9.	B
Q10.	C
Q11.	D
Q12.	C
Q13.	B
Q14.	D
Q15.	C
Q16.	B
Q17.	A
Q18.	C
Q19.	B
Q20.	A
Q21.	B
Q22.	A
Q23.	D
Q24.	C
Q25.	A