Marks: 70



Time: 10:00 am to 1:00 pm

No of printed pages: 2

SARDAR PATEL UNIVERSITY

M.Sc 2nd Semester (Surface Coating Technology) (CBCS) Examination Tuesday, 26th March, 2019 PS02ESCT21: Chemical Engineering Operations

N.B. 1) Marks allotted to the question are on its RHS 2) Illustrate your answer whereas necessary with the help of heat sketches and chemical equation					
Q.1 1	Choose the correct Answer from the Followings: For handling of corrosive liquids, toxic liquidsp	ump are commonly employed. [0)1]		
• •	a) diaphragm b) centrifugal	2	اي.		
	c) piston d) gear				
2.	2. Filters that remove small amounts of solids to proc	luce sparkling clear liquid are [0	1]		
	referred as				
	a) cake filter b) clarifying fi	iter			
•	c) deep bed filter d) both b & c	·	143		
ა.	A rotary drum filter isa) a continuous vacuum filterb) a disco	րtinuous pressure filter)1]		
	•	•			
4.	c) a continuous pressure filter d) none of the above 4. The separation of liquid mixture is possible for relative volatility values [0]				
	a) greater than 1 b) less than 1		- 13		
	c) equal to 1 d) none of the	ese			
5.	i. In vacuum distillation, substance boils at	סן)1]		
	a) its exact boiling point temperature				
_	c) a temperature below its boiling point d) under high				
6.		ito definite shape & size.)1]		
	a) Crushers b) Grinders c) Ultrafine grinders d) Cutters				
7	c) Ultrafine grindersd) Cutters7. Which of the following unit operation is used for recovery of solvents after solvent				
•	cleaning of resin kettle?)1]		
	-	oration d) Distillation	_		
8.	Heat flow mechanism through liquid is known as)1]		
	a) convection b) conduction				
	c) radiation d) none of the	ese			
Q.2	Answer <u>Any Seven</u> of the followings:	[1	14]		
	1. What is priming in centrifugal pump?				
	2. Explain cavitation in pump.				
	3. Why Blake Jaw crusher is commercially widely used	d in industry?			
	4. Explain the terms constant rate filtration and consta	•			
	Define filtration and state factors affecting the rate of filtration.				
	6. State Raoult's law and Dalton's law.	·			
	7. Write signification of drying operation.				
	8. Define conduction, convection and radiation with example.				
	9. Write importance of mixing operation in coating industry.				

Q.3	(a)	Write in brief principle, construction and operation of ball mill.	[06]
	(b)	Classify size reduction equipment in detail and write the importance of size reduction	[06]
		operation.	
		OR	
	(b)	Explain principle, construction and working of Jaw crusher.	[06]
		at the state of th	[06]
Q.4	(a)	Give classification of pump and discuss in detail different criteria for selection of	[uu]
		pump.	F0.07
	(p)	Write a note on centrifugal pump.	[06]
		OR	
	(b)	Write a note reciprocating pump.	[06]
			F0.03
Q.5	(a)	Write a note on rotary drum vacuum filter.	[06]
	(b)	Write a note on Plate & Frame filter press.	[06]
		OR	
	(b)	What is drying? Explain typical rate of drying curve under constant drying condition.	[06]
Q.6	(a)	Write a note on Azeotropic distillation.	[06]
	(b)	Explain in brief classification and flow patterns of impellers.	[06]
	(~/	OR	
	(b)	Derive the equation for heat flow through cylinder by conduction.	[06]

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