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SARDAR PATEL UNIVERSITY

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SARDAR PATEL UNIVERSITY

M.Sc. Semester (Surface Coating Technology) (CBCS) Examination

Monday, April 27th, 2015

Time: 10:30 am to 1:30 pm

Course No.: PS02ESCT01

	Subject: Chemical Engine	ering Operations	miser designing and G
NR (1)	Marks allotted to the question are on its RHS		Total Marks: 70
	Illustrate your answers wherever necessary with	th the help of neat sl	retches & chemical
	Choose the correct answer from the following		[80]
Q.1.1	Pumps are generally employed for transportation a. liquid b. solid	of c. gas	d. none of these
Q.1.2	Which type of heat transfer is involved in cooking a. Conduction & Convection c. Radiaton & Conduction	of polyester resin in reb. Conduction d. None of these	eactor?
Q.1.3	The pumps are commonly employed in liquids.	industries for handlin	
	a. diaphragm b. centrifugal	c. piston	d. gear
Q.1.4	A rotary drum filter is a. a continuous vacuum filter c. a continuous pressure filter	b. a discontinuous p d. none of the above	ressure filter
Q.1.5	For effective grinding, ball mill should be operated a. more b. less	than the critic	al speed. d. none of these
Q.1.6	Size reduction in Jaw crusher is primary effected a. impact b. shear	c. compression	d. attrition
Q.1.7	unit operation is used for the remov liquid from the solid material.	al of relatively small a	mounts of water or other
	a. Filtration b. Drying	c. Evaporation	d. None of these
Q.1.8	Which of the following unit operation is used for rikettle?	ter solvent cleaning of resin	
	a. Filtration b. Drying	c. Evaporation	d. Distillation
Q.2	Answer Any Seven of the following short que	estions:	[14]
	 Write the necessity/importance of size re Compare centrifugal pump with reciproca Why priming is required in centrifugal put Explain the terms constant rate filteration What is filter aid? What is its importance Define i. Relative volatility ii. Raoult's law Write in brief the importance of mixing on Explain Fourier's law of heat transfer. How dryers are classified? 	ating pump. mp? a and constant pressur ? /.	

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Q.3 a	Write a note principle, construction and working of Jaw crusher.		
Q.3 b	Explain a note on ball mill.	[06]	
	OR		
Q.3 b	Explain with neat diagram the working principle and industrial application of Roll Crusher.	[06]	
Q.4 a	How pumps are classified? Write in detail about the centrifugal pumps.	[06]	
Q.4 b	Write a note on diaphragm pumps.	[06]	
	OR		
Q.4 b	Discuss in detail different crieteria for selection of pump.	[06]	
Q.5 a	Define filtration. Write a note on Rotary vacuum filter.	[06]	
Q.5 b	Write a note on Plate & Frame filter press.	[06]	
	OR		
Q.5 b	What are Azeotropes? Explain azeotropic distillation process & its importance in coating industry.	[06]	
Q.6 a Q.6 b	With a neat sketch explain the working principle and industrial application of Tunnel dryer. Explain in detail rate of drying curve.	[06] [06]	
	OR		
Q.6 b	Explain different mechanism for heat transfer. Derive the equation for heat flow through cylinder by conduction.	[06]	
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