SARDAR PATEL UNIVERSITY

M. Sc. Semester - IV Examination Saturday, 23rd March 2019

INDUSTRIAL CHEMISTRY

Subject: Technology of chemical process industries

Date:	23/03/	2019,	.5	atuso	asy
Time:	02:00	p.m.	to	05:00	p.m

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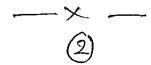
Q. 1

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Course No.: PS04CICH12/24

Time: 02:00 p.m. to 05:00 p.m.			ı. to 05:00 p.m.	Marks: 70			
Q. 1		Ans	wer the following MCQs (Attemp	ot all)		[08]	
	i.	Pigment imparts colour and to the medium					
	••	(a)	Transparency	(b)	Solubility		
		(c)	Conductivity	(d)	Opacity		
	ii.		sulphate process for TiO2 produc	ction uti			
	•••	(a)	Rutile	(b)	Ilmenite		
		(c)	Bauxite	(d)	Kaomite		
	iii.	Glass transition temperature increases in the polyester by the presence of					
		(a)		(b)	Aromatic structure		
		(c)	Both a & b	(d)	None		
	iv.	The yellowing in linseed is due to the presence of					
		(a)	Double unsaturated linoleic acid	(b)	Triple saturated linoleic acid		
		(c)	Triple unsaturated linoleic acid	(d)	Double saturated linoleic acid		
	ν.				er dispersible with difficulty when it		
	٧.	has:					
		(a)	Very high acid value	(b)	Low acid value		
		(c)	High iodine value	(d)	None		
	vi.	Which of these is not a blocking agent in the polyurethane systems:					
		(a)	Malonates	(b)			
		(c)	E-Caprolactum	(d)	Vegetable oils		
	vii.	Wurtz synthesised urethane by reacting a mono-functional alcohol and					
		(a)	Isocyanates ,	(b)	Sulphate		
		(c)	Sulfamate	(d)	None		
	viii.	Epc	oxy resin is formed by the reaction	1 of			
		(a)	Melamine and formaldehyde	(b)	Epichlorohydrin and bis-phenol A		
		(c)	Carboxylic acid and polyol	(d).	Di-isocyanates and diol		
Q.2		Ans	Answer the following short question (Any seven)				
	I.	Wh	What are inorganic pigments? Give examples.				
	TH.	III. Define alkyd resin.IV. Define the amine hardening system for epoxy resin.					
	111.						
	IV.						
	V.	Enlist the qualities of ideal blocking agent for isocyanates.					
	VI.		ferentiate between Resole and No				
	VII.	Define fertilizer and give its classification based on their nutrient content.					
VIII		* 1					
	IX.	Wh	nat are fumigants?				

Q.3	(a)	With the help of flow diagram explain manufacture of titanium dioxide by sulphate process.	[06]
	(b)	What is organic pigment? Give the detailed classification with application. OR	[06]
	(b)	Write explanatory note on azo-pigments.	[06]
Q.4	(a)	Give the classification of alkyd resins.	[06]
	(b)	Describe the fatty acid process for manufacturing of alkyd resin.	[06]
		OR	
	(b)	With the help of flow diagram explain the manufacture of saturated polyester resin.	[06]
Q.5	(a)	Give the application and properties of epoxy resins.	[06]
	(b)	Describe the polyurethane coating systems of solvent Bourne two pack reactive coatings.	[06]
		OR	
	(b)	With the help of flow diagram explain manufacture of epoxy resin.	[06]
Q.6	(a)	Describe the functions of important nutrients for plants.	[06]
	(b)	Write a note on natural insecticide.	[06]
	• •	OR	[-0]
	(b)	With the help of flow diagram explain manufacture of single super phosphate.	[06]



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