(36)

No. of Printed pages: 2

## SARDAR PATEL UNIVERSITY

M.Sc. 2<sup>nd</sup> Semester (Surface Coating Technology) Examination (CBCS)
Wednesday, April 22<sup>nd</sup>, 2015
PS02CSCT02: Chemistry & Technology of Organic Pigments, High Performance Pigments,
Additives & Solvents

I.B.	(1) (2)	30 am to 1:30 pm Marks allotted to the question are of Illustrate your answers wherever n equations		Total Marks: 70 RHS sary with the help of neat sketches & chemical	,	
Q.1	Cho	pose the correct option				
(1)	Wh	Which of the following is not a high performance organic pigment?				
	,	Quinacridone	,	Dioxazine Violet		
		Diketo pyrrolo pyrol (DPP red)		•		
(2)				produces light colored pigments.	(1)	
	,	Zinc oxide	•	Iron		
	,	TiO <sub>2</sub>	,	Selenium	(1)	
(3)		Which of the following additive is used in water based latex paints.				
	,	HEC	,	Al-stearate		
	,	Drier	d)	All of these		
(4)		k the odd one among thickeners?			(1)	
		Liquid bodying agent		Organoclay		
	,	Fumed silica	,	Aluminium Stearate		
(5)		dequate addition of addinanufacture.	itive g	rives low color development during pain	(1)	
	a)	Flow & Leveling	b)	Thickeners		
	c)	Drier	d)	W & D agents		
(6)	Sili	Silicone additive with molecular weight more than 100000 is used as additive.				
	a)	Flow & Leveling	b)	Defoamers		
	c)	Flooding & Floating control	•	Hammertone		
(7)		drier in combination with cobalt is useful in aqueous & high solid systems.				
	•	Potassium	,	Zirconium		
	c)	Barium	,	None of these		
(8)		drier can be used during the poigment.	igmer	nt dispersion stage to improve the wetting of	(1)	
	a)	Со	-,	Ca		
	c)	Pb	- d)	All of the above		
Q.2 1		swer <u>any seven</u> of the following ghlight the principle of special effect p	igmer	nt.	(14)	
2		ite structure & property of any one Hi	•			
3		anate pigments do not require surface	-			
Λ		• •		potings? Enlist various additives used in continue?		

5	What are coalescing agents & explain their use in latex paints.		
6	Give mechanism & advantages of associative thickeners?		
7	Dilution ratio and Dilutability in solvents.		
8	Flocculation leads to the instability of pigment dispersions- justify		
9	Kauri-Butanol value of solvents.		
Q.3(a)	What are CICPs? Give their classification & method of preparation? Write in brief about Aluminate pigments?	(6)	
(b)	• •	(6)	
(b)	Write note on any one in detail  i. Phthalocyanine Blue & Green Pigment  ii. Cadmium Sulfide and Cerium Sulfide pigments	(6)	
Q.4(a)	What is the basic difference between substrate free & substrate based special effect pigment? Give brief account on Mica & Silica based special effect pigment?	(6)	
(b)	performance organic pigments?	(6)	
(b)	OR Why wetting & dispersion is important in pigmented coatings? Explain in brief about characteristics of wetting & dispersing agents used in coatings? Illustrate & explain mechanism of W&D agents in aqueous & non aqueous systems?	(6)	
Q.5(a)	What are driers? Why they are used? Give their mechanism in oxidative cured system? Explain roles of Active drier and auxiliary drier with two examples in each class?		
(b)		(6)	
	OR		
(b)	Write note on any one in detail iii. Biocides iv. Flow & Leveling agents	(6)	
Q.6(a)	What are solvents? Explain their function during paint manufacturing and paint application? Give detailed classification of solvents giving example?	(6)	
(b)		(6)	
	OR		
(b)	Explain the chemistry of Silicone additives used in surface coatings?	(6)	

