Seat N	No.: Enrolment No	
	GUJARAT TECHNOLOGICAL UNIVERSITY	
	BE - SEMESTER-VIII • EXAMINATION – SUMMER • 2015	
Subject		
•		
•	t Name: New Technologies & Products	
Time: 10:30 am - 1:00pm Total Marks: 70		
Instructions:		
1. Attempt all questions.		
	. Make suitable assumptions wherever necessary.	
3.	. Figures to the right indicate full marks.	
01()	White describes the immediate of Catalante in Hadron and in manage Familia	_
Q.1 (a)	7	7
<b>(3.</b> )	Homogeneous and Heterogeneous Catalysts for Hydrogenation.	_
<b>(b)</b>	Write a brief note on equipments used for hydrogenation in Dyes & Pigments	7
0.4()	industry.	_
Q.2 (a)	Write down applications of hydrogenation technology in Dyes & Pigments	7
(L)	industry.	_
<b>(b)</b>	Explain the following terms:	7
	(i) Hue (ii) Saturation (iii) Lightness  OR	
<b>(b)</b>		7
(D)	Write a brief note on Plug Flow Reactors, Packed Bed Reactors and Continuous Stirred-Tank Reactors used in Dyes and Pigments industry.	,
$\Omega_{3}(a)$	What is Pigment dispersion? Discuss the stages of pigment dispersion with	7
Q.3 (a)	suitable diagrammatical representation.	,
<b>(b)</b>	Describe the methods of manufacturing of copper Phthalocyanine pigments	7
<b>(b)</b>	with suitable reaction scheme.	,
	OR	
Q.3 (a)	Explain the anticorrosive pigments with its mechanism in details.	7
(b)	What is meant by process optimization? Explain the six steps used to solve the	7
(10)	process optimization problem.	′
Q.4 (a)	Explain the statistical quality control techniques for dyestuff industries.	7
(b)	i) Justify: A large number of modern organic pigments are synthetic organic in	7
(10)	nature.	,
	ii) Write a note on: colour index.	
OR		
Q.4 (a)	Write a brief note on:	7
• ()	i) Pigment used in specialty inks (ii) Pigment used in paints	
<b>(b)</b>	Explain the newer methods of production of pigments.	7
Q.5(a)	What is pigment? Discuss the following properties of the pigments are	
- · /	important in selecting a pigment for any particular product.	7
	(i) Hiding power (ii) Particle size & Shape (iii) Refractive index	
<b>(b)</b>	Explain the optical properties of absorption pigments, effect pigments and	7
	natural pearls with its suitable diagrammatic representation.	
OR		
<b>Q.5</b> (a)	Define the flop index & Discuss the model used to explain the flake	
	orientation during film formation.	7
<b>(b)</b>	Explain the pearl effect pigments with variable controlling pearl effect.	7

\*\*\*\*\*\*