GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-V • EXAMINATION – WINTER 2013

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Subject Code: 153604 Date: 02-12-2013 Subject Name: Technology of Intermediates and Colorants			
Time: 10:30 pm to 01:00 pm Total Marks: 70			
Instructions:			
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	What are the various process parameters required for quality, raw material and safety aspects of any unit process. (Give suitable example named unit processes used in Dyes industry).	07
	(b)	Explain safety aspects of Nitration and what precautions you can suggest in order to avoid local heating and run away reaction.	07
Q.2	(a)	Write a note on: "Sulphonation" as a unit process.	07
	(b)	Write a note on:	03
		 Ionic liquids. Various solvents used for unit processes and selection criterion for the same 	04
		OR	
	(b)	Draw Block flow diagram for "Nitration of Benzene" and list material of construction for various components.	07
Q.3	(a)	How will you synthesis; 1. H- acid 2. Phenol and 2. Ariling	07
	(b)	Differentiate between process flow diagram and block flow diagram with the help of example (One unit process with description is necessary) OR	07
Q.3	(a)	1. Write a synthesis of BON acid.	03
	/ = \	2. Write a synthesis of 2-hydroxynaphthalene.	04
	(b)	Enlist various solvents used for sulphonation and their advantages.	07
Q.4	(a)	Which types of technologies are used in the production of Azo dyes and direct dyes? Compare their pros and cons also.	07
	(b)	Explain reactive dyes in detail.	07
Q.4	(a)	Write a note on continuous, semibatch and batch process and describe the principles of isomer separation.	07
	(b)	Write a note on: "Nitrating agents"	07
Q.5	(a) (b)	Write a note on: 1. Amination 2. Ammonolysis1. Explain Friedel Craft's reaction with examples2. Write a note on: Hydroxylation	04+03 04 03
		OR	
Q.5	(a)	 Write the various available routes for synthesis of Anthraquinone. State uses of Anthraquinone system in dyes Write a note on: 1 Reduction - 2 Hydrogenetics 	04 03 04 + 02
	(U)	white a note on. 1. Reduction 2. rydrogenation	04+03
