Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V • EXAMINATION – WINTER • 2014

Subject Code: 152801 **Date: 26-11-2014**

Subject Name: Chemistry of Intermediates and Dyes

Time: 10.30 am - 01.00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Enlist different unit processes. With the reaction mechanism, describe sulphonation unit process in detail.	**07**
	(b)	Describe Dow and Cumene Process in detail.	**07**
Q.2	**(a)**	Describe Nitration of Benzene and Toluene and obtain all possible intermediate from it.	**07**
	(b)	How reduction is useful in obtaining intermediates? Explain Zinc reduction in detail.	**07**
		OR	
	(b)	Describe Oxidation unit process in the synthesis of certain intermediates with suitable examples.	**07**
Q.3	**(a)**	Explain Bucherer Reaction in detail. State its advantages.	**07**
	(b)	Discuss Witt's Theory in detail.	**07**
		OR	
Q.3		Give the detailed classification of dyes based on their application methods.	**14**
Q.4		Describe the synthesis of following Intermediates:	
		(a) H-acid	**07**
		(b) Amino G – Acid and Amino J- Acid	**07**
		OR	
Q.4		Why the dyes were known as coal-tar dyes? Discuss the destructive distillation of coal-tar along with different products.	**14**
Q.5		Explain with suitable examples the Orientation rules in Benzene series.	**14**
		OR	
Q.5		Elucidate in detail, Modern theories of Color and its constitution.	**14**

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