Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V • EXAMINATION – WINTER • 2014

Subject Code: 152803 Date: 03-12-2014

Subject Name: Analytical Textile Chemistry- I

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)**	Do as directed.	**08**
	i)	Distinguish between temporary and permanent hardness.	
	ii)	Give two main point of difference between BOD and COD.	
	iii)	Explain the term "colorimetric analysis".	
	iv)	Name the four types of viscometers.	
	(b)	Elucidate the effect of iron, copper and manganese content in water on textile processing.	**06**
Q.2	**(a)**	Describe the methods to determine the acidity and alkalinity of water.	**07**
	(b)	Give the method for determination of hardness of water with principle and chemical reactions involved.	**07**
		OR	
	(b)	Narrate in brief the effect of solids in water on textile processing. Describe the method for determination of TDS in water.	**07**
Q.3	**(a)**	Describe the method for determination of copper content in water.	**07**
	(b)	Explain the principle and method for determination of COD of an effluent sample.	**07**
		OR	
Q.3	**(a)**	Elucidate the principle and method for determination of dissolved oxygen content of water/ effluent sample.	**07**
	(b)	Describe the Nephelometric method for quantifying color of water sample.	**07**
Q.4	**(a)**	Define calorific value. Describe the method for determination of calorific value of coal.	**08**
	(b)	Discuss the principle and method of Thin layer chromatography.	**06**
		OR	
Q.4	**(a)**	Give the method for determining penetration number of a lubricant sample.	**06**
Q.4	**(b)**	Describe the methods for determining pour point and cloud point of lubricant oil.	**08**
Q.5	**(a)**	Explain the principles of Spectrophotometry and conductometry.	**07**
	(b)	Elaborately discuss the application of potentiometric titrations in analytical textile chemistry.	**07**
		OR	
Q.5	**(a)**	Give the test method for determination of % purity of Acetic acid and Sodium hydroxide.	**07**
	(b)	Describe the methods for determination of moisture content and ash content.	**07**

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