Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE - SEMESTER–V • EXAMINATION – SUMMER 2013**

**Subject Code: 152803 Date: 21-05-2013**

**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)** **Answer the following objective questions.** **07**

i) The unit ppm is equivalent to grams per liter, true or false?
ii) Temporary hardness in water is due to _____ of Ca & Mg.
iii) Iron in processing water causes_____ of shades.
iv) COD is always greater than BOD, true or false?
v) What does the iodine content of an oil indicate?
vi) Differentiate between iodometry and iodimetry.
vii) Bomb calorimeter gives_____ calorific value.

**(b)** Describe the titrimetric method for determination of temporary and permanent hardness of water. **07**

**Q.2** **(a)** Explain the term Hardness in water. Discuss the detrimental effect of hardness in water on various textile processes. **07**

**(b)** With principle and significance, describe the method for determination of Cu content of water. **07**

**OR**

**(b)** With significance and principle, describe the method for determination of manganese content in water. **07**

**Q.3** **(a)** Discuss the concept of COD and BOD with the significance of their determination. Explain the chemical reactions taking place during biological degradation. **07**

**(b)** With principle, describe the method for determination of BOD of an effluent. **07**

**OR**

**Q.3** **(a)** Enlist various tests carried out for testing of lubricating oils. Give the method to determine penetration number of a grease sample. **07**

**(b)** Describe the test methods involved in proximate analysis of coal. **07**

**Q.4** **(a)** Give the test methods for determination of drop point and pour point of oil with its significance. **07**

**(b)** With significance, describe various methods to determine fire point and flash point of a thermic fluid. **07**

**OR**

**Q.4** **(a)** Give the methods for determination of purity of Acetic acid and Soda ash. **07**

**Q.4** **(b)** Give the methods for determination of purity of Hydros and sodium sulphide. **07**

**Q.5** **(a)** Describe the method for determination of gross calorific value of coal. **07**

**(b)** Write a short note on pH meter. **07**

**OR**

**Q.5** **(a)** Justify the position of conductometric titration in analytical textile chemistry. **07**

**(b)** Write a short note on Spectrophotometry. **07**

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