

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – V (NEW) EXAMINATION – WINTER 2015

Subject Code: 2152803

Date: 05/12/2015

Subject Name: Analytical Textile Chemistry - I

Time: 10:30am to 1:00pm

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. Phenolphthalein indicator works in pH \_\_\_\_\_ range.
  - ii. Hazen is a unit to measure \_\_\_\_\_ of water.
  - iii. Sequestering agents are evaluated by their \_\_\_\_\_ value.
  - iv. \_\_\_\_\_ gas is filled in bomb of bomb calorimeter.
  - v. Peel strength is used to determine \_\_\_\_\_ power of sizing agent.
  - vi. Name the reagent used for determination hardness of water.
  - vii. \_\_\_\_\_ test is used to determine wetting power of a wetting agent.
- (b) Give the test methods for determination of acidity in a water sample. 07**
- Q.2 (a) Name various methods used for determination of hardness of water, Describe the most versatile method for determination of total hardness. 07**
- (b) Discuss about various types of hardness and its relationship with alkalinity in water. 07**
- OR**
- (b) Describe colorimetric method for determination of copper content in water. 07**
- Q.3 (a) Give test methods to test lubricant oils for their aniline point and cloud point. 07**
- (b) Describe construction and working of Penetrometer with its significance in testing of lubricant. 07**
- OR**
- Q.3 (a) Elaborately describe the use of Bomb calorimeter in analysis of coal. 09**
- (b) Discuss the test methods involved in ultimate analysis of coal. 05**
- Q.4 (a) Describe the method for determination of Chloride content in water. 07**
- (b) Give the test method to determine % purity of Hydrogen Peroxide and Sodium Hypochlorite. 07**
- OR**
- Q.4 (a) Explain the significance, principle and method of TLC. 07**
- (b) Discuss the principle and working of conductometer with its significance in field of analytical textile chemistry. 07**
- Q.5 (a) Explain the term BOD and give the method for determination of BOD for an effluent sample. 09**
- (b) Discuss the construction and working of Redwood viscometer. 05**
- OR**
- Q.5 (a) Give the test methods for determination of Flash point and Fire point of an oil sample. 06**
- (b) Discuss the principle of Spectroscopy. Name various spectroscopic techniques used in analytical chemistry. Brief about IR spectroscopy. 08**