

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 152803****Date: 17-01-2013****Subject Name: Analytical Textile Chemistry - I****Time: 02:30 pm to 05:00 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) Explain ultimate analysis of coal in detail. **07**
(b) Give the definition of calorific value. Explain in detail gross calorific value and net calorific value. **07**
- Q.2** (a) Enlist various constituents of water. Discuss the detrimental effect of non metallic and metallic hardness in textile processing. **07**
(b) Describe the difference of BOD and COD. Give the method of determination of COD of an effluent. **07**
- OR**
- (b) Enumerate test methods for determination of consistency and drop point of lubricants. **07**
- Q.3** (a) Describe test methods for determination of Fire point and Flash point of lubricants. **07**
(b) Discuss about potentiometric titration in detail. **07**
- OR**
- Q.3** (a) Discuss test methods for determination of acid number and saponification number of lubricants. **07**
(b) Describe the types of hardness of the water. Give the method for determination of total hardness. **07**
- Q.4** Discuss Red-wood viscometer in detail with neat sketch. **14**
- OR**
- Q.4** Discuss Brook field viscometer in detail with neat sketch. **14**
- Q.5** (a) Discuss test methods for determination of alkalinity of water sample. **07**
(b) Discuss test methods for determination of iron content of water sample. **07**
- OR**
- Q.5** (a) Discuss test methods for determination of acidity of water sample. **07**
(b) Discuss test methods for determination of manganese content of water sample. **07**
