

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – SUMMER • 2014****Subject Code: 151303****Date: 19-06-2014****Subject Name: Physico-Chemical Treatment Technologies****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) Explain various physical and chemical characteristics of water and waste-water. **07**
(b) Draw neat sketch and explain Conventional Waste-water Treatment Plant. **07**
- Q.2** (a) What is screen? Explain purposes and types of screens. **07**
(b) Differentiate between Primary and Secondary treatment. **07**
- OR**
- (b) Write a short note on 'Grit chamber'. **07**
- Q.3** (a) Enlist the mechanism of coagulation and describe any two. **07**
(b) Discuss and differentiate between types of settling phenomena in water and waste-water treatment. **07**
- OR**
- Q.3** (a) Differentiate between coagulation and flocculation. **07**
(b) Write a short note on 'Tube Settlers'. **07**
- Q.4** (a) Explain the construction and working of Slow sand filter with neat sketch. **07**
(b) Write a short note on 'Filter backwashing'. **07**
- OR**
- Q.4** (a) Derive the Stokes law for determining settling velocity of discrete particles. **07**
(b) Explain the construction and working of Rapid sand filter with neat sketch. **07**
- Q.5** (a) Enlist and explain the disinfectants used for water treatment. **07**
(b) Describe the sources and characteristics of sludge generated in conventional waste-water treatment plant. **07**
- OR**
- Q.5** (a) Enlist the factors which affect chlorination. **07**
(b) Describe the methods normally used to process the sludge before its final disposal. **07**
