

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV • EXAMINATION – SUMMER 2013****Subject Code: 141304****Date: 17-06-2013****Subject Name: Water Pollution and Control****Time: 10:30am – 01:00pm****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) Differentiate between: **06**
 (i) Primary treatment and secondary treatment
 (ii) Aerobic treatment and anaerobic treatment
 (iii) Discrete settling and flocculent settling
- (b) With the help of a neat sketch explain the different treatment units of a conventional sewage treatment plant. **08**
- Q.2** (a) Write a short note on construction and working of Rapid Sand Filter, with the help of a neat sketch. **07**
 (b) Write down the sources and effects of following parameters in water and waste water: **07**
 (i) Solids
 (ii) pH
- OR**
- (b) What is disinfection? Explain chlorination as a method of disinfection. **07**
- Q.3** (a) Define the terms: **06**
 (i) Surface Overflow Rate. (iv) Weir Overflow rate
 (ii) Detention time (v) Organic loading rate
 (iii) Food to microbe ratio (vi) Scour velocity
- (b) Enlist and explain the effects of water pollution. **08**
- OR**
- Q.3** (a) Prepare a list of coagulants used in water and wastewater treatment and explain any two in detail. **07**
 (b) What is the Equalization? What is its importance in wastewater treatment? **07**
- Q.4** (a) Write a short note on “Activated Sludge Process.” **07**
 (b) Write a note on principles of biological treatment. Differentiate between suspended growth and attached growth process. **07**
- OR**
- Q.4** (a) (i) Give the difference between High Rate Trickling Filter & Standard Rate Trickling Filter. **07**
 (ii) Explain the phenomena of sloughing in a Trickling Filter
 (b) Write a short note on “Water Softening”. **07**
- Q.5** (a) Enlist and explain the causes and consequences of oil pollution **07**
 (b) Give the classification of screens. **07**
- OR**
- Q.5** (a) Write a short note on thermal pollution **07**
 (b) (i) Prepare a list of applications of sedimentation. **07**
 (ii) Give the classification of Grit Chamber and explain any one.
