

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– V • EXAMINATION – WINTER 2016

Subject Code:151303**Date: 19/11/2016****Subject Name: Physico-chemical Treatment Technologies****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) Enlist the important contaminants and give its environmental significance **07**
(b) With the help of a neat flow diagram explain conventional water treatment plant **07**
- Q.2** (a) Explain the following terms: Sustained flow, Minimum hourly flow, Minimum daily flow, peak hourly flow, maximum daily flow, average daily flow **07**
(b) Why grit chambers are used? Explain types of grit chambers **07**
- OR**
- (b) Write a short note: Screening **07**
- Q.3** (a) Explain Jar test for optimum coagulant dosage **07**
(b) Enlist the design steps involved for a flocculator with all the necessary equations **07**
- OR**
- Q.3** (a) With the help of a neat sketch explain interparticle bridging with polymers **07**
(b) Explain coagulation theories in detail **07**
- Q.4** (a) Write a short note: Settling column analysis for type – 1 suspension **07**
(b) Explain the terms: Chemical conditioning, Elutriation **07**
- OR**
- Q.4** (a) Write a short note: Disinfection with Chlorine **07**
(b) Derive the expression for stokes equation **07**
- Q.5** (a) Enlist different types of filters and explain any one in detail with a neat sketch **07**
(b) Explain design of sludge drying beds **07**
- OR**
- Q.5** (a) Write a short note: Sludge digestion **07**
(b) Explain the purpose of disinfection. Enlist the factors affecting disinfection **07**
