Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V • EXAMINATION – WINTER • 2014

Subject Code: 153704 Date: 03-12-2014

Subject Name: Water and Waste Water 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 objectives of primary ,secondary and tertiary treatment	**07**
	(b)	Draw a neat sketch of conventional waste water treatment plant and explain the different units along with their functions.	**07**
Q.2	**(a)**	Give the classification of different types of filters and explain the multimedia filters.	**07**
	(b)	Explain the mechanisms involved in removal of solids in a filter.	**07**
		OR	
	(b)	With the help of a neat sketch explain the concept of "Break point Chlorination"	**07**
Q.3	**(a)**	Explain the terms: (i) Terminal particle settling velocity (ii) Sludge loading rate (iii) Effective size of sand particle.	**07**
	(b)	Enlist and explain the different types of settling phenomena.	**07**
		OR	
Q.3	**(a)**	Differentiate between (i) Physical treatment and chemical treatment (ii) Coagulation and flocculation	**07**
	(b)	What is meaning of population forecasting and its important for designing of any environmental structure	**07**
Q.4	**(a)**	Explain about the exposing of pesticide in environment and their effect on human	**07**
	(b)	Enlist and explain the sources and effects of following parameters in water and waste water (i) Oil and grease (ii) Total solids (iii) Hardness	**07**
		OR	
Q.4	**(a)**	What are the various important of flow rate	**07**
	(b)	Explain the ideal sedimentation concept and highlight the chief features of each settling zone	**07**
Q.5	**(a)**	What are the advantages of anaerobic treatment over aerobic treatment?	**07**
	(b)	Explain the treatment process of ASP (activated sludge process) and draw the neat and clean diagram and also mention the advantages and disadvantages of this system	**07**
		OR	
Q.5	**(a)**	Describe the usual sources of sludge and the characteristics of sludge generated in a conventional wastewater treatment plant	**07**
	(b)	Describe the methods normally used to process the sludge before its final disposal	**07**

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