Seat No.:	Enrolment No

Subject Code:X40601

## GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER-IV EXAMINATION - SUMMER 2016

Date:26/05/2016

T	'ime	ect Name:Environmental Engineering :10:30 AM TO 01:00 PM Total Marks: 7 etions:  1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.	70	
Q.1	(a) (b)	•		
the town. The sedimentation period is 4 hrs. The velocity of flow is 0.15 the depth of water in the tank is 4.0 m. Assume an allowance for sludge Also find the overflow rate.		Design a sedimentation tank for a water works which supplies 1.5 MLD water to the town. The sedimentation period is 4 hrs. The velocity of flow is 0.15m/min and the depth of water in the tank is 4.0 m. Assume an allowance for sludge as 80cms. Also find the overflow rate.	07 07	
	<b>(b)</b>	OR Write a note on variation in demand of water.	07	
Q.3	(a) (b)	What is optimum dose of coagulant and how would you find it in the laboratory?  Explain in brief different methods of removing temporary and permanent hardness of water.		
Q.3	(a) The following is the population record of a city available from the past records. Determine the future population of this city in the year 2030 geometrical Increase method.  Year 1970 1980 1990 2000		07	
		Population (in thousands) 31.2 42.3 65.4 82.9 100.5		
	<b>(b)</b>	State the properties of coagulants.	07	
Q.4	(a)	What is low cost sanitation system? Describe with the help of a neat sketch the	07	
	<b>(b)</b>	components of septic tank.  What is a grit chamber? Why is it necessary to provide this in the treatment of sewage? Discuss the design criteria of a grit chamber with a neat sketch.  OR	07	
Q.4	(a) (b)	Give classification of sewers based on the construction materials.  Explain with a neat sketch different method of distribution of water.		
Q.5	(a)	What is self cleansing velocity of waste water flow in the sewers? What is dry weather flow?	07	
	<b>(b)</b>	Explain the terms (Any two): (i) Recirculation ratio (ii) Hydraulic loading (iii) Sewer appurtenances (iv) Flash mixers  OR	07	
Q.5	(a)	What are SVI and MLSS? What does a higher value of SVI indicate? How would you overcome this condition at activated sludge plant?	07	
	<b>(b)</b>	Give comparison between high rate and conventional trickling filters.	07	

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