GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) - EXAMINATION - SUMMER 2017

Subject Code: 2161407	Date: 08/05/2017
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Subject Name: Food Plant Utilities & Sanitation

Time: 10:30 AM to 01:00 PM	Total Marks: 70
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Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

			MARKS	
Q.1		Short Questions	14	
	1	What are the functions of chimney?		
	2	Define cleaning and state its importance.		
	3	Enlist the components of automatic CIP system.		
	4	Why metal and plastic brushes are not recommended in cleaning?		
	5	Write the general biochemical reaction involved in anaerobic waste treatment.		
	6	Why exhaust fan is not recommended in food industry?		
	7	State the purpose of chloramination treatment of the water.		
	8	What is hydrologic cycle?		
	9	Define food stone.		
	10	Name four sanitizing agents recommended for food industry.		
	11	State the purpose of aerated lagoon.		
	12	State the selection criteria of resins used in ion exchange.		
	13	State the functions of alkalis in cleaning solution.		
	14	Why screens are used in the physical treatment of waste water?		
Q.2	(a)	What are the main problems posed by presence of Fe and Mg in water?	03	
	(b)	What is grit chamber? Explain its operation.	04	
	(c)	What are the requirements of ideal boiler? Discuss selection process of boiler?	07	
		OR		
	(c)	Explain the critical points to reduce the waste and waste water in the food industry.	07	
Q.3	(a)	How colour and odor indicates the age of waste water?	03	
	(b)	Explain the appropriate steps involved in cleaning of food equipment.	04	
	(c)	"Water is critical utility and critical hazard to the food industry."	07	
		Explain?		
OR				
Q.3	(a)	State the criteria for the selection of detergent.	03	
	(b)	Differentiate:	04	
		(i) Sequestration and Chelation(ii) Wetting and rinsability		
	(c)	Discuss the ideal steps of CIP system in food plant.	07	
Q.4	(a)	How pH of water affects the chlorine dosing.	03	
	(b)	Why do you prefer LED lights over fluorescent lights use in food industry.	04	
	(c)	How plant utilities limit the food plant size?	07	

Q.4	(a)	Write the properties of caustic soda as cleaning agent.	03
	(b)	Write note on Economizer.	04
	(c)	What is trickling filter? Explain the working mechanism of trickling filter.	07
Q.5	(a)	Discuss the requirements of ideal air system in food industry.	03
	(b)	Explain the principle involved in cold lime method of water softening.	04
	(c)	Enlist the operational techniques of CIP system. Explain any one in detail.	07
~ -		OR	0.4
Q.5	(a)	List various auxiliaries used in the boiler.	03
	(b)	Write note on boiler efficiency calculations	04
	(c)	i. What are the different sources of water supply in food industry?	07
		ii. Priorities them on the basis of assurance of supply and quality of supply.	
