

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2161407****Date:21/05/2019****Subject Name:Food Plant Utilities & Sanitation****Time:10:30 AM TO 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) “Water is life line of food processing plant.” Justify? **03**
- (b) What is role of economizer and optimizer in the boiler? **04**
- (c) Distinguish between: **07**
1. Cleaning and sanitation
 2. CIP and COP

- Q.2**
- (a) Why metal brushes are not used in the food industry? **03**
- (b) What are the main problems caused by the presence of Fe and Mg in water. **04**
- (c) Define boiler corrosion. Explain the need and methods of treatment of boiler feed water. **07**

OR

- (c) Explain the process and biochemical reactions involved in chlorination of water. **07**
- Q.3**
- (a) What are the different utilities of the food plant? **03**
- (b) What is draught? Discuss its usefulness in boiler operation? **04**
- (c) List different boiler accessories and auxiliaries? Discuss their role? **07**

OR

- Q.3**
- (a) Justify the replacement of all the bulbs at a time even not fused in the food industry? **03**
- (b) State the functions of complex polyphosphate and alkali in detergent formulation. **04**
- (c) Explain the activated sludge process with neat sketch. **07**

- Q.4** (a) What are the ideal properties of good cleaner? **03**
(b) Briefly describe the construction of trickling filter. **04**
(c) Explain working of any one type of boiler used in the food industry. **07**

OR

- Q.4** (a) Enlist the various ways to reduce the BOD of effluent generated in food industry. **03**
(b) Briefly explain the basic steps of equipment cleaning in food industry. **04**
(c) State the different sources of water and give the detail classification of water on the basis of hardness. **07**
- Q.5** (a) State the advantages of anaerobic process over aerobic process in relation to the waste treatment. **03**
(b) Explain how the utilities affect the plant size? **04**
(c) Explain the ion exchange method of water softening. **07**

OR

- Q.5** (a) "Stagnant water is more contaminated as compared to running water". Justify the statement with scientific reason(s). **03**
(b) Define effluent and state the different ways to minimize the solid wastes in the waste water of food plant. **04**
(c) Explain the features of automatic CIP process. **07**
