

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-VIII Examination May 2012

Subject code: 181401

Subject Name: Food Plant Utilities and Sanitation

Date: 10/05/2012

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 boiler operation with figure. Also give its design consideration. 07

(b) Answer the following : 07

- (i) What is the application of compressed air?
- (ii) What is function of blow-down valve?
- (iii) List properties of detergent.
- (iv) Give Advantages of CIP method.
- (v) What is function of feed check valve?
- (vi) List various materials used for insulation of cables.
- (vii) List various criteria for selection of industrial drive.

Q.2 (a) What is cleaning? Explain cleaning process in food industry with fundamental steps involved in it and various cleaning agent used. 07

(b) Write short note on power factor. 07

OR

(b) Discuss water and air supply system for food process plant including pretreatment required for each. 07

Q.3 (a) Discuss detergents and their types. 05

(b) Discuss regarding various air moving and vacuum equipment used in the food industry. 05

(c) What is illumination? List requirements and factors affecting good lighting scheme. 04

OR

Q.3 (a) Discuss methods of sterilization process. 04

(b) Give Composition of flue Gas in boiler. Discuss its performance. 04

(c) Define Following terms: 06

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|---------------------|---------------|---------------|
| 1. Boiler Mountings | 2. Earthing | 3. Economiser |
| 4. Draught | 5. CIP System | 6. COD |

- Q.4** **(a)** What is biological oxygen demand (BOD)? Discuss methods for reducing BOD of the industrial waste. **06**
- (b)** Write short note on the following: **08**
- (i) Water supply and control mechanism for boiler.
- (ii) Boiler efficiency.
- OR**
- Q.4** **(a)** Discuss effluent treatment system. **05**
- (b)** Discuss various water treatments to reduce boiler corrosion. **05**
- (c)** Explain plant sanitation. **04**
- Q.5** **(a)** Explain general construction of Underground Cable. **04**
- (b)** Write about various spray devices used in cleaning. **03**
- (c)** Compare fire tube boiler with water tube boiler and discuss design consideration of fire tube boiler. **07**
- OR**
- Q.5** **(a)** Write short note on industrial drive. **05**
- (b)** What is switchgear? Explain switchgear equipment. **05**
- (c)** Write short note on bus bar arrangement in substation. **04**
