



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 182852**

Roll No.

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## B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15  
**FOOD PROCESSING WASTE MANAGEMENT**

Time : 3 Hours]

[Total Marks : 100

Note: (1) Attempt all questions.

(2) Each question carries equal marks.

- 1 Discuss the standards for emission or discharge  $5 \times 4 = 20$  of the effluents for any four of the following Food Industries as per the provision of the Environment (Protection) Act, 1986:
- (A) Food and Fruit Processing Industry
  - (B) Flour mills
  - (C) Slaughter House
  - (D) Fermentation Industry
  - (E) Edible Oil & Vanaspati Industry
  - (F) Sea food industry.

- 2 Attempt any two parts of the following : (10×2=20)
- (A) Name the By-products of Cereals and oilseeds Industry and comment on their effective utilization.
  - (B) Suggest efficient ways to utilize the by-products obtained from Plantation Industry.
  - (C) Describe the major utilization of processing by-products obtained from Meat Processing Industry.
- 3 Attempt any two parts of the following: (10×2=20)
- (A) Discuss the importance of BOD, COD and TOD in waste characterization.
  - (B) Describe the characteristics of various types of screens and their suitable locations in processing industries.
  - (C) Define sedimentation and discuss the four types of sedimentation that occur in wastewater.
- 4 Attempt any two parts of the following: (10×2=20)
- (A) Explain the factors effecting oxygen requirement during biological waste treatment. Suggest suitable systems for meeting the above requirements.
  - (B) Discuss the role of Rotating Biological Contractors in treatment of wastewater. Also discuss its merits and demerits over other treatment systems.
  - (C) Discuss the principle, function and types of Lagoons used in industrial wastewater treatment. Also discuss the problems in lagoon operation.

- 5 Attempt any two parts of the following: (10×2=20)
- (A) Discuss the principles of Coagulation and flocculation processes in the treatment of industrial wastewaters.
  - (B) Discuss the importance and mechanism of Ultra filtration, Reverse osmosis, Ion exchange and Electro dialysis as advanced wastewater treatment processes.
  - (C) What do you understand by activated carbon adsorption process? Also comment on use of disinfectants in wastewater treatment.
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