

Roll No. ....

Total Pages : 03

**BT-7/M-20**

**37236**

**SEWERAGE AND SEWAGE TREATMENT  
CE-407N**

Time : Three Hours]

[Maximum Marks : 75

**Note** Attempt Five questions in all, selecting at least one question from each Unit.

**Unit I**

1. (a) What is the importance of sanitation for a locality ?  
Discuss about Hygiene. **8**
- (b) Explain the different systems of sewage with their advantages and disadvantages. **7**
2. (a) Explain the different shapes of sewers which shape signifies more for a average populated north Indian city. **7**
- (b) Calculate the velocity of flow and discharge in a sewer of circular section having diameter of 1 meter, laid at a gradient of 1 in 500. Use Manning's formulae taking  $N = 0.012$ . Assume the sewer is running half full. **8**

**(2)L-37236**

**1**

## Unit II

3. (a) Differentiate between biochemical oxygen demand and chemical oxygen demand. **7**
- (b) Write short notes on the following : **8**
- (i) D.O.
  - (ii) TDS.
4. Give the permissible limits for the following parameters before disposal of effluent into surface water source :
- (i) pH value
  - (ii) Oil and grease
  - (iii) Total suspended solids
  - (iv) Lead
  - (v) Zinc. **15**

## Unit III

5. (a) Discuss about the various types of treatment processes in detail with one example of each process. **10**
- (b) What do you understand by Imhoff tank ? Explain its working. **5**
6. (a) Discuss the working of trickling filters with the help of neat diagram. **8**

**(2)L-37236**

**2**

- (b) What are stabilization ponds? Discuss in detail with the help of diagram. **7**

#### **Unit IV**

- 7.** (a) Draw and explain the oxygen deficit curve for a river receiving discharge of sewage. **8**  
(b) Explain the process of disposal by dilution.
- 8.** Explain in detail the following terms :  
(i) Sewage Farming  
(ii) Reduction  
(iii) Oxidation. **15**