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BT-7/M-20 **37047**

SEWERAGE AND SEWAGE TREATMENT
CE-407-E

Time : Three Hours] [Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Explain type of sewage and sewerage systems and explain the most preferred sewerage system among the all systems.

(b) How is sewage flow is estimated for designing a sewerage system ? Explain.

2. (a) A 120 mm diameter circular sanitary sewer is laid at a slope of 1 in 450. Calculate the following :

(i) Velocity of flow and discharge when flowing full

(ii) Velocity of flow and discharge when flowing 0.5 full.

(b) Explain the following :

(i) Self cleaning velocity of sewer

(ii) Difference between egg shaped and circular sewer.

Unit II

3. (a) What are the differences between the suspended and dissolved solids ? How are suspended solids determined ? Explain.

(b) What is BOD ? Derive an expression to calculate BOD remaining after t day at 20ºC for sewage.

4. Give permissible limit of the following parameter :

(i) Oil and grease (ii) Arsenic

(iii) BOD and COD (iv) D.O.

(v) Sulphate.

Unit III

5. What are collective of sewage treatment ? Draw a schematic flow diagram of a conventional sewage treatment plant.

6. What is trickling filter ? How is sewage treated in a trickling filter ? Explain.

Unit IV

7. Discuss the process of natural self purification of a river/ stream.

8. What is sewage sickness ? Suggest various measures to prevent sewage sickness.