

Seat No.	
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T.E. (Civil Engineering) (Semester - V) Examination, December -2015

ENVIRONMENTAL ENGINEERING - I (Revised)

Sub. Code:66237

Day and Date : Saturday, 12 - 12 - 2015

Total Marks :100

Time : 02.30 p.m. to 05.30 p.m.

- Instructions :
- 1) All questions are compulsory.
 - 2) Figures to the right indicate full marks.

SECTION - I

Q1) a) What are various types of demand of water for a city? Also mention the factors affecting the water demand. [8]

b) Write a short note on the followings water quality parameter. [8]

i) Hardness of water

ii) pH value and determination

iii) Turbidity

iv) M.P.N

Q2) a) Describe the various types of coagulants commonly used in water treatment. [8]

b) Find the dimensions of a rectangular sedimentation basin for the following data. [8]

Volume of treated water = 3 million liter per day.

Detention period = 4 Hours.

Velocity of flow = 10 cm/min.

OR

b) Explain types of intakes with neat sketch. [8]

P.T.O.

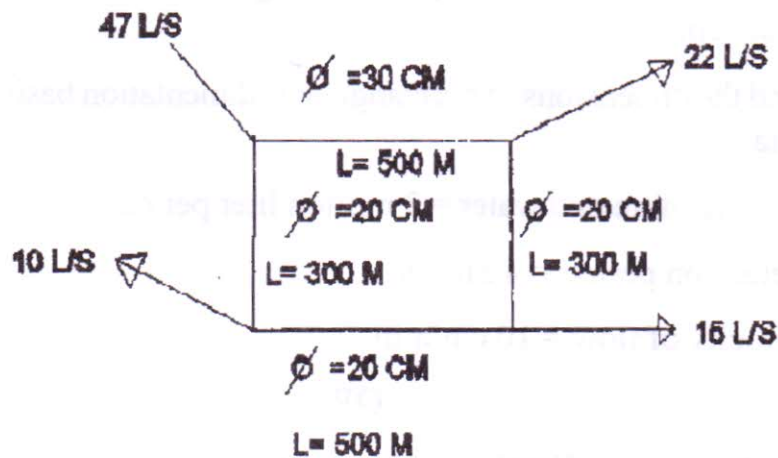
- Q3) a) Explain the theory of filtrations. [6]
- b) The analysis of water shows the following: free $\text{CO}_2 = 3\text{ppm}$, Alkalinity = 65ppm, Non Carbonate hardness = 95ppm, Total Magnesium = 10ppm. Assume that it is possible to remove all but 30ppm of carbonate hardness with lime and that finished water is to have total hardness of 80ppm. Determine the amounts of chemicals required per million liters of water. [6]
- c) Explain the method of application of chlorine. [6]

SECTION - II

- Q4) a) What are the methods of determining the capacity of reservoir? Explain mass curve method. [8]
- b) What are the types of pipe materials available for water supply scheme? [8]
- Q5) a) State and explain with diagram the different layout patterns adopted for distribution of water supply in pipe network. [8]
- b) Explain the necessity, working and importance of thrust block. [8]

OR

- b) Calculate the head losses and the corrected flows in the various pipes of a distribution network shown in Fig. The diameters and the lengths of pipes used are given against each pipe. Make use Hardy- Cross method with William Hazen's formula. Compute the corrected flow after two corrections. [8]



- Q6) a) Explain following water appurtenances.
- i) Sluice valve [8]
 - ii) Fire hydrant valve. [8]
- b) Explain concept of green building. [6]
- c) Write short note on water budget. [4]

