2005 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

III B.TECH. I SEMESTER REGULAR EXAMINATIONS
ENVIRONMENTAL ENGINEERING I
(CIVIL ENGINEERING)

NOVEMBER -2005

TIME: 3 HOURS
MARKS: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain briefly the main objectives of analysis of water used for domestic purposes.

(b) The following are the results of the Physical and Chemical analysis of a sample of surface water considered as the only available source of supply. Calculate the hardness and alkalinity of water and mention the proposed treatment for this type of water. Chemical Constituent Concentration mg/lit Chemical Constituent Concentration mg/lit

Ca 30 Fe 0.4
Mg 40 Mn 0.3
Na 30 Turbidity 600
K 10 pH 8.5
CO3 30 F 4.0
HCO3 70 NO3 0.1
SO4 80 - -

2. (a) Describe the Hardy-Cross method of analysis of pipe networks?

(b) Describe the graphical method of determining the storage capacities of a reservoir.

3. Explain how B.O.D and C.O.D can be determined in the laboratory.

4. What are the principles adopted in providing an efficient and economical system of drainage in buildings.

5. (a) Explain briefly the sedimentation process in a water treatment plant with the help of a neat sketch.

(b) What are the common types of sedimentation tanks?

6. (a) What are the different factors affecting the bacterial efficiency of chlorine? Explain.

(b) State the characteristics of Ideal disinfectant.

7. Design a screen chamber for the data given below

Maximum flow- 0.45m3/s
 Average flow- 0.23 m3/s
 Minimum flow-0.084 m3/s
 Also draw the plan and section of a swing chamber.

8. (a) What is an oxidation pond? State its advantages and disadvantages.

(b) State the features for the design of oxidation ponds.