Code No: NR310104 **NR**

**III B.Tech I Semester Supplementary Examinations, November 2006**
**ENVIRONMENTAL ENGINEERING**
**(Civil Engineering)**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Estimate the rate of demand of water per capita per day, and total quantity of water required per day for a town of 20,000 population. [8+8]
   (b) Explain briefly the basic objectives of a good water supply scheme and their importance in the water supply scheme.

2. Write short notes on the following . [4 x 4=16]
   (a) Spigot and Socket Joint
   (b) Water meter
   (c) Fire- Hydrant
   (d) Air valve

3. Explain how B.O.D and C.O.D can be determined in the laboratory. [16]

4. (a) What is a trap. When and where should it be provided. What are the requirements of a good trap. [8+8]
   (b) Describe Intercepting Trap, Floor trap and Gulley trap. .

5. (a) Show that the efficiency of a sedimentation tank is independent of depth of tank.
   (b) 10 mg of copperas is consumed with lime at a coagulation basin per litre of water. Determine the quantity of copperas and the quick lime required to treat 10 million litres of water per day for one year. Molecular weight of copperas is 278 and of quick lime is 56. [8+8]

6. (a) Explain the working of a Rapid sand filter with a neat sketch. [8+8]
   (b) Design a set of slow sand filters to treat 2 million liters per day of water.Give the dimensioned sketch and explain how it works.

7. (a) What are the operational problems and their remedies in trickling filters. [8+8]
   (b) What are the different methods of disposal of screenings?

8. (a) Explain the components of a septic tank with a neat sketch. [8+8]
   (b) What are the design criteria for design of septic tank?

⋆ ⋆ ⋆ ⋆ ⋆