Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 08

Ph.D in Faculty of Engineering (CE / CSE)

PHYSICO-CHEMICAL TREATMENT METHODS

M.Code : 77386

Time : 3 Hrs. Max. Marks : 100

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT question.
2. Each question carry TWENTY marks.

1. Discuss various physical, chemical and biological characteristics of testing of raw water samples. What steps would you take in order to make them fit for drinking. 20

2. (a) Distinguish between Primary Treatment and Secondary Treatment of Sewage. 8

   (b) Distinguish between : 8

   Grit Chamber and Detritus Tanks

   (c) 'The grit chambers are usually provided in duplicate in sewage treatment plant'. Give your views. 4

3. (a) Mention the purpose, location, cleaning devices and design aspects of screens. 14

   (b) Explain Kessener Process of Aeration. 6

4. (a) Discuss in detail the usual coagulants which are employed for the treatment of water. 12

   (b) Differentiate between : Tube Settlers and Plate Settlers. 8

5. (a) Explain the working of Dorroco Aerator. 12

   (b) Determine Sludge volume Index when 100 mL of sludge collected in 25 minutes on drying weighed 800 mg. 8

6. Design Slow Sand Filter for 50,000 persons. Take consumption of water = 135 litres per day. Assume all necessary data. 20

7. (a) Explain the action of chlorine as a disinfecting material. 10

(b) 'The small changes in the ozone concentrations could have dramatic effects on the life on earth. Explain with reasons. 10

8. Write short notes on :

(a) Adsorption Isotherms 10

(b) Ion-Exchange Process. 10

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.