

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
End Term Examination

B.Tech.[3rd Year]/[V Semester]/[Academic Year 2013-14]

Student ID



Course Name: Environmental Engineering

Course Code: CE 505

Max Marks: 40

Time: 03.00 hr

Instructions:

1. This paper contains three sections. Attempt all sections.
2. Read the instructions carefully before attempting each section.

Section A

(10 Marks)

Attempt all parts from section A. Part (a) of 5 marks, each of 1 mark and part (b) of 5 marks, each of 2.5 marks.

Q.1 (a) (I) Hardness of water is mainly due to and.....

(II) Type 2 settling is.....

(III) Coagulation theory applicable in natural processes is.....

(IV) Write three chemicals used in disinfection of water?

(V) Write the required concentration of fluoride in water.?

Q.1(b) (I) Why Stoke's equation can not be used in Type 2 settling ?

(II) Write the settling velocities of various typical size particles along with their size.

Section B

(20 Marks)

Attempt any four out of five questions. Each question carry equal marks.

Q.2 Derive the equation of terminal velocity for Type ¹~~2~~ settling.

Q.3 Discuss about the Jar test for determination of optimum coagulant dosage.

Q.4 Write the different type of joints provided in cast iron pipes.

Q.5 Discuss about filtration in detail and write the difference between slow sand filter and Rapid sand filter

Q.6 Explain the methods of nitrate removal from water .

P.T.O.

Section C

(10 Marks)

Q.7 Write in sequence the working, principle, operation of a Sewage Treatment Plant (STP) with its units in detail.

OR

Discuss about Fluoridation and Defluoridation and also describe the various methods of Fluoride removal from water.

(5 Marks)

Q.8 Write short note on the following:

(i) Trickling Filter

(ii) Rotating Biological Contactors

(5 Marks)