

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- September 2016

M.Tech 1st Semester

COURSE CODE: 10M11CE115

MAX. MARKS: 15

COURSE NAME: Mechanical and Electrical systems in Buildings

COURSE CREDITS: 03

MAX. TIME: 1Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q1. A water sample having particles distribution as shown below, so calculate the total % removal and thus efficiency. $V_s = 0.35$ mm/s (5)

Size mm	0.1	0.2	0.3	0.4	0.5	0.6
Quantity	10%	20%	10%	5%	35%	20%
V_s mm/s	0.2	0.25	0.3	0.35	0.4	0.5

Q2. Determine the surface area of a settling tank for design discharge of $0.5 \text{ m}^3/\text{s}$, using design overflow rate as $32.5 \text{ m}^3/\text{m}^2\text{-day}$. Find the depth of clarifier sedimentation tank for detention time = 95 mins. Assume all other suitable data. Length should not exceed 100m (5)

Q3. (5)

- What are intake structures? What important consideration you will suggest for site selection of intake structures?
- What are different types of Intake structures? Explain in brief.