JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- Sept 2017

M.Tech 1st Semester

COURSE CODE: 14M31CE116   MAX. MARKS:15

COURSE NAME: Wastewater Treatment

COURSE CREDITS: 3   MAX. TIME: One Hr

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. **Assume any other necessary data suitably.***

1. Design bar screen and screen chamber for municipal sewage treatment plant using following data: (a) Population= 10 lakhs (b) Spacing for bars= 20 mm (c) Peak factor= 2 (d) Diameter of incoming sewer = 1.5 m (e) Depth of flow in sewer at peak flow = 1.2 m (f) velocity in sewer at peak design flow = 1.2 m/s (g) Drop of screen chamber floor with respect to sewer invert = 0.12 m.   (8)

   Provide following information: Details of bar screen, dimensions of screen chamber, head loss and hydraulic profile through bar rack under clean condition.

2. Draw schematic process flow sheet of conventional sewage treatment plant.   (2)

3. Design a circular sedimentation tank to treat municipal sewage. Daily average flow of 50 MLD. Assume peak factor 2.25. Influent MLSS concentration is 3000 mg/L.   (5)