PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING

SUMMER TERM / MAKE UP END TERM EXAMINATION

Semester: Summer Term 2018-19   **Date**: 24 July 2019

Course Code: CIV 218   **Time**: 2 Hours

Course Name: Environmental Engineering II   **Max Marks**: 80

Program & Sem: B.Tech & VI Sem (2015 Batch)   **Weightage**: 40%

Instructions:

(i)   *Read the question properly and answer accordingly.*

(ii)   *Question paper consists of 2 parts.*

(iii)   Scientific and Non-programmable calculators are permitted.

Part A

Answer **all** the Questions. **Each** question carries **ten** marks.   (4Qx10M=40)

1. Design a septic tank for a community of 200 persons, assume suitable data.

2. Explain the Oxygen Sag curve.

3. Explain the different type of settling

4. A city discharges 100 cumecs of sewage into a river,which is fully saturated with oxygen and flowing at the rate of 1500 cumecs ,during its lean days with a velocity of 0.1m/s.The 5 days BOD of sewage at the given temperature is 280 mg/l.Find when and where the critical D.O deficit will occur in the downstream portion of the river ,and what is its amount. Assume co-efficient of purification of the river(f) as 4 and co-efficient of deoxygenation (K_D) as 0.1

Part B

Answer **all** the Questions. **Each** question carries **ten** marks.   (4Qx10M=40)

5. Design a conventional activated sludge plant to treat domestic sewage with diffused air aeration system,given the following data,assume the suitable data

   Population – 350000

   Average sewage flow – 180 lpcd

   BOD of sewage – 220 mg/l

   BOD removed in primary treatment – 30 %

   Overall BOD reduction desired – 85 %

6. An average operating data for the conventional activated sludge treatment plant is as follows.

Wastewater flow - 35000 m^3/d ,Volume of aeration tank – 10900 m^3,Influent BOD – 250mg/l, Effluent BOD – 20 mg/l,MLSS – 2500 mg/l,Effluent Suspended solids – 30 mg/l,waste sludge suspended solids -9700 mg/l,Quantity of wasted sludge – 220 m^3/d.Find aeration period,F/M ratio ,Efficiency of BOD removal,and Sludge days for the system.

7. Explain the working of Imhoff tank and Oxidation tank.

8. What are the different methods of disposal of Sewage effluent,explan the disposal by dilution method.And,also write the standard prescribed by CPCB for Effluent discharge into inland waters.