Question Paper Code : 91315

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Sixth Semester

Civil Engineering

CE 6605 : ENVIRONMENTAL ENGINEERING – II

(Regulations 2013)

(Common to PTCE 6605 – Environmental Engineering II for B.E. (Part-Time)
– Fifth Semester – Civil Engineering – Regulations – 2014)

Time : Three Hours   Maximum : 100 Marks

Answer ALL questions.

PART – A   (10×2=20 Marks)

1. Define a) Sullage, b) MINAS.

2. What is meant by Population equivalent ?

3. Define small bore systems.

4. Write the objective of screen chamber.

5. State the objectives of grey water harvesting.

6. What are the objectives of primary treatment of sewage ?

7. What is oxidation ditches ?

8. What is the principle of UASB ?

9. What are the methods of sludge conditioning ?

10. What are the objectives of sludge dewatering ?

PART – B   (5×13=65 Marks)

11. a) Enumerate and explain the various physico-chemical characteristics of sewage
and state their environmental significance..

(OR)

b) Explain the various sources of wastewater and their effects on environment.

12. a) Design a sewer running 0.7 times full at maximum discharge for a town provided with the separate system serving a population of 1 Lakh. Water is supplied from the water works at a rate of 200 litres per capita per day. Take a constant value of n = 0.013 at all depths of flow. The permissible slope is 1 in 600. Take peak factor of 2.25. Assume 80% of water turns as sewage.

(OR)

b) Explain the step by step procedure for laying and testing of a sewer line.

13. a) i) Explain briefly the operation and maintenance of Sewage Treatment Plants. (7)

ii) Design a primary clarifier of full scale STP with ASP for an average sewage flow of 12 Mld. Assume suitable date if necessary. (6)

(OR)

b) Explain with neat sketch component parts, functioning advantages and disadvantages of septic tank. Also discuss various methods of disposal of septic tank effluent. (13)

14. a) Determine the size of a high rate Trickling Fitter for the following data :

Sewage flow = 6 Mld

Recirculation Ratio = 1.5

BOD of Raw Sewage = 230 mg/l

BOD removal in PST = 30%

Final BOD effluent = 20 mg/L.

(OR)

b) i) Explain the Reclamation and Reuse of Sewage. (6)

ii) Discuss in detail about waste stabilization pond. (7)

15. a) Explain the factors affecting self purification of surface waters.

(OR)

b) Explain the different methods of sludge dewatering.

PART – C   (1×15=15 Marks)

16. a) i) Discuss any one recent advancement in Sewage Treatment. (7)

ii) Explain the factors affecting characteristics and composition of sewage. (8)

(OR)

b) i) Explain about Sludge Disposal methods. (8)

ii) Discuss about the Bio-gas treatment and its advantages. (7)