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**Question Paper Code: 31163**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Sixth Semester

Civil Engineering

01UCE603 - WASTE WATER ENGINEERING

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define population equivalent.
2. Define design period.
3. What are the objectives of sewage treatment process?
4. What is grey water harvesting?
5. What is Activated sludge process?
6. What is the use of oxidation ditch in secondary treatment?
7. What is UASB?
8. Write the factors affecting the rate of Re-oxygenation in streams.
9. Define thickening of sludge.
10. What is Elutriation of sludge?

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Discuss the factors involved in the estimation of quantity of sewage. (8)  
(ii) Explain the characteristics and the average composition of domestic sewage of a town with its significance. (8)

Or

- (b) (i) Explain the methods of two pipe and one pipe plumbing system. (8)
- (ii) With neat sketch explain the component parts of the deep manhole. (8)
12. (a) (i) With a neat sketch, explain the working of a septic tank. (8)
- (ii) Discuss the functions of an bar screen with neat sketch. (8)

Or

- (b) With a neat sketch describe the working principle and design criteria of
- (i) Screens and (8)
- (ii) Grit chamber (8)
13. (a) What are stabilization pond? Explain the various methods of treatment available using stabilization pond and list the major merits and demerits of it. (16)

Or

- (b) (i) With neat sketch, discuss the working principle of trickling filter. (8)
- (ii) Discuss the various methods of waste water reclamation techniques. (8)
14. (a) Explain the various stages involved in the self purification of rivers with neat sketch. (16)

Or

- (b) Explain sewage sickness with its preventive measures and also list the types of crops to be grown and write precautionary measures to be followed in sewage farming. (16)
15. (a) Describe the various methods of disposal of dewatered sludge, highlighting their suitability, merits and demerits. (16)

Or

- (b) Explain with a flow chart the working principle of a anaerobic sludge digester. (16)
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