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**Question Paper Code: 46103**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Civil Engineering

14UCE603- WASTE WATER ENGINEERING

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Sewage treatment works are normally designed for a design period of
  - (a) 40-50 years
  - (b) 30-40 years
  - (c) 15-20 years
  - (d) 5-10 years
2. Traps
  - (a) Are water seals which prevent the entry of foul gases
  - (b) Are used to trap the rats entering sewers
  - (c) Dissolve the foul gases
  - (d) Create syphonic action to increase the quick disposal of sewerage.
3. The detention period for plain sedimentation water tanks, is usually
  - (a) 16 to 24 hours
  - (b) 8 to 16 hours
  - (c) 4 to 8 hours
  - (d) 24 to 36 hours
4. To facilitate maintenance of uniform flow rate in the treatment units \_\_\_\_\_ is used
  - (a) Equalization
  - (b) Skimming Tanks
  - (c) Flocculation
  - (d) Pre-aeration
5. When the bacterial growth rate and decay rate are same there will be no net increase or decrease in mass of microorganism. This phase is referred as
  - (a) Log growth phase
  - (b) Declining growth phase
  - (c) Stationary phase
  - (d) Endogenous growth phase



- (b) (i) List the various measures that should be considered for corrosion of sewers. (8)
- (ii) Compare the one pipe and two pipe plumbing systems. (8)
17. (a) (i) Write the objectives of treatment processes. What are the treatment processes, explain in detail? (8)
- (ii) Explain the role of Screen Chamber in Sewage treatment plant. (8)

Or

- (b) (i) What is meant by sedimentation tank in a treatment system? Explain in detail the various types of sedimentation tank with neat sketches. (10)
- (ii) Tabulate the advantages and disadvantages of ASP and Trickling Filters. (6)
18. (a) Describe the activated sludge process with a flowchart. (16)

Or

- (b) (i) Describe UASB and its treatment process? (10)
- (ii) Enumerate the advantages & disadvantages of oxidation ditch. (6)
19. (a) State the objectives of sewage disposal and list the methods of disposal and explain The same. (16)

Or

- (b) What is sewage farming? What are the advantages over the method of disposal of sewage by dilution? (16)
20. (a) (i) Mention the need for sludge characterization and thickening. (8)
- (ii) Discuss the need for sludge dewatering and explain the various sludge dewatering methods. (8)

Or

- (b) (i) Describe in detail about the sludge thickening process. (8)
- (ii) Write the various disposal methods available to dispose the dewatered Sludge. (8)

