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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2014

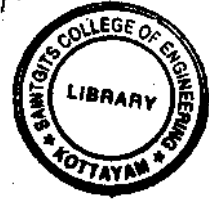
Eighth Semester

Branch : Civil Engineering

CE 010 803 – ENVIRONMENTAL ENGINEERING – II (CE)

(New Scheme–2010 Admissions)

[Regular]



Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Write a short note on time of concentration and its significance.
2. Explain an oxygen sag curve with a neat sketch.
3. Write the necessity of maintaining constant velocity in grit chamber.
4. Write a short note on the factors which affect the sludge digestion and their control.
5. Discuss the merits and demerits of Imhoff tank.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Describe conservancy and water carriage system. What are the merits and demerits of the two systems?
7. Define sewer appurtenance. List out the various sewer appurtenance used in a sewerage system.
8. What is a manhole? With a neat sketch, explain the various parts of a typical drop manhole.
9. Give the list of methods available for the treatment of sewage.
10. Write a short note on disinfection of sewage by using chlorine.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. Explain briefly about the physical, chemical and biological characteristics of sewage.

Or

Turn over

12. Determine the size of a circular sewer for a discharge of 600 lps running half full. Assume natural slope of the ground as 1 in 10000 and $n = 0.015$.
13. What do you understand by self-purification of a stream? Explain the factors affect this property.

Or

14. Under what circumstances is pumping of sewage necessary? Mention which type of pump is suitable for sewage pumping. Why?
15. With a neat sketch, explain the construction and operation of a sedimentation tank.

Or

16. Design an aerated grit chamber for treating municipal waste water with an average flow rate $0.5 \text{ m}^3/\text{s}$ (43.2 MLD). Assume peak flow rate to be 3 times the average.
17. With a neat sketch, explain the construction and working of a trickling filter.

Or

18. Sketch and explain the types of aeration systems in activated sludge process.
19. Enumerate the various methods that can be used to dispose of the digested sludge. Discuss any one of the important methods which is used in India.

Or

20. Design a septic tank for a small colony of 150 persons, provided with assured water supply from the municipal head works at 120 lpd. Assume any data you may need. Also draw a neat sketch of the septic tank designed.

(5 × 12 = 60 marks)

