A 194

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2005.

Fifth Semester

Civil Engineering

CE 334 — ENVIRONMENTAL ENGINEERING — I

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Name two impacts (environmental) of Industrial development.

2. What is sustainable development?

3. What is the objective of water supply engineering?

4. What is meant by dissolved oxygen? How much is the saturation concentration at 20°C?

5. Why centrifugal pump is eminently used in water supply?

6. Distinguish between sewage and sewerage.

7. What are the requirements of distribution system?

8. Name the methods to locate leaks.

9. What is soil pipe in drainage system of a building?

10. What is trap? Why is it necessary?

PART B — (5 × 16 = 80 marks)

11. Describe the laying and construction of testing sewer lines with diagram. (16)

12. (a) (i) What is the role of environmental engineers in water supply projects? (8)

(ii) Write notes on sustainable development. (8)

Or

(b) What are the impacts of development on water and air?

13. (a) (i) What are the waterborne diseases and what are the causes of these diseases?

(ii) Explain the significance of excess of phosphorus and nitrogen in water.

Or

(b) (i) State the advantage of circular section in sewer design. (8)

(ii) Design an outfall sewer in the separate system for a town with a population of 2,00,000 persons with water supply at 180 lit/head/day. The sewer has a slope of 1 in 1000. The sewer is smooth with cement mortar (n = 0.012). Self cleansing velocity of 0.75 m per sec. The dry weather flow is 1/3rd of the maximum discharge. (8)

14. (a) (i) What is meant by balancing of pipe network? (7)

(ii) Derive Hardy cross method of balancing network of pipe. (9)

Or

(b) (i) What are the merits and demerits of using meters in consumer lines? (8)

(ii) What are principal methods for locating leaks? (8)

15. (a) Draw a sketch of service connections from the street main to a residential building and state the function of each fitting shown.

Or

(b) Explain the 'one' and 'two' pipe system of plumbing and state the conditions under which they are adopted?

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