

ANNA UNIVERSITY OF TECHNOLOGY, COIMBATORE
B.E. / B.TECH. DEGREE EXAMINATIONS : NOV / DEC 2011

REGULATIONS : 2008

FIFTH SEMESTER - CIVIL ENGINEERING
080100027 - WATER SUPPLY ENGINEERING

Time : 3 Hours

Max.Marks : 100

PART - A

(10 x 2 = 20 Marks)

ANSWER ALL QUESTIONS

1. Write the per capita demand for an average Indian city.
2. Why the water demand changes from season to season?
3. State Darcy's law to determine yield?
4. Define specific yield
5. What is the principle of hydraulic ram?
6. What are vitrified clay pipes?
7. Mention the appurtenance used for fire fighting in distribution system.
8. Draw the layout of grid-iron system.
9. What is meant by an equivalent pipe?
10. What are the assumptions made in Hardy cross method?

PART - B

(5 x 16 = 80 Marks)

ANSWER ALL QUESTIONS

11. a) Explain the different methods of forecasting future population of a city for which a water supply scheme is to be planned.

(OR)

11. b) The population of 5 decades from 1930 to 1970 are given below. Find out the population after one, two and three decades beyond the last known decade, by using incremental increase method.

Year	1930	1940	1950	1960	1970
Population	25,000	28,000	34,000	42,000	47,000

12. a) Write short notes on rainfall measurement, rain gauges and their types.

(OR)

- b) A pumping test was made in a medium sand and gravel to a depth of 15 m where a bed of clay was encountered. The normal groundwater level was at surface. Observation holes were located at distances of 3m and 7.5m from the pumping well. At a discharge of 3.6 litres/sec from the pumping well, a steady state was attained in about 24hrs. the drawdown at 3m was 1.65 m and at 7.5 m was 0.36 m. Compute the coefficient of permeability of the soil.

13. a) Briefly discuss the use of cast iron, steel and R.C.C as materials for water supply pipes. Explain how are the first two types of pipes get corroded?

(OR)

- b) Explain the working of a centrifugal pumps with its advantages and disadvantages.

14. a) State the functions of a service reservoir with neat sketches.

(OR)

- b) What are the water softening methods available and uses of water softening? Explain the iron and manganese removal with suitable examples.

15.a) Write short notes on:

- (i) Water intake structures (4)
- (ii) Factors considered in selection of a source of water. (6)
- (iii) Requirements of good distribution system. (6)

(OR)

- b) (i) What are distribution reservoirs? (4)
- (ii) Explain the purpose of distribution reservoirs types and their design aspects. (12)

*****THE END*****