

A

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 55104

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2019

Fifth Semester

Civil Engineering

15UCE504 ENVIRONMENTAL ENGINEERING

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Which one of the following practices causes reduction in per capita water consumption? CO1 R
 - Good quality water
 - Hotter climate
 - Modern living
 - Metering system
- The devices which are installed for draining water from different sources, are called CO1- R
 - Filters
 - Intakes
 - Outlets
 - Inlets
- Slow sand filters when compared to rapid gravity filters, may normally CO2- R
 - 5 times slower
 - 10 times slower
 - 20 times slower
 - 30 times slower
- The process of desalination of water, which makes use of microporous membranes is CO2- R
 - Electrodialysis
 - Solar distillation
 - Freezing
 - Cooling
- The maximum pressure, which a water pipe is subjected to during its operation is CO3- R
 - Pipe pressure
 - Working pressure
 - Design pressure
 - Test pressure
- Goose neck is a CO3- R
 - Right angled sleeve
 - Small size curved pipe
 - Galvanized iron pipe
 - G I materials
- The most suitable section of a sewer in a separate sewerage system is CO4- R
 - Rectangular
 - Circular
 - Egg shape
 - Parabolic

8. Laying of sewer is usually done with the help of CO4- R
 (a) Theodolite (b) Compass
 (c) Plane table (d) Sight rails and boning rods
9. Water seal in traps generally varies from CO5- R
 (a) 25-50 mm (b) 10-50 mm (c) 25-75mm (d) 50-100 mm
10. The gas evolved in a sludge digestion tank is CO5- R
 (a) Nitrogen (b) Ammonia (c) Hydrogen sulphide (d) Methane

PART – B (5 x 2= 10Marks)

11. List the function of appurtenances. CO1- R
12. Define disinfection. CO2- U
13. What are the requirements of water distribution system? CO3- U
14. Differentiate sewage flow and storm water run-off. CO4- U
15. What is biogas recovery? CO5- U

PART – C (5 x 16= 80Marks)

16. (a) The population statistics pertaining to a town are given below. CO1- U (16)
 Estimate the population expected in 1980 by (i) arithmetic increase method (ii) incremental increase method (iii) Geometric increase method (iv) Decrease growth rate method.

Year	1930	1940	1950	1960	1970
Population	70000	100000	150000	200000	240000

Or

- (b) Sketch and describe a river intake. Enumerate the factors to be considered for selection of site for a river intake. CO1- U (16)
17. (a) Design a rapid sand filter unit for 4.5 MLD per day of supply, with all its principal components CO2- U (16)
 Or
- (b) Explain detail about any two types of water softening process. CO2- U (16)
18. (a) Discuss the four methods of distribution of water supply with neat sketches. CO3- U (16)
 Or
- (b) Explain various types of distribution system for water supply CO3- U (16)

19. (a) Explain four systems of plumbing with sketches. CO4- U (16)
Or
- (b) (i) Write down the procedure for laying and testing of sewer lines with neat diagram. CO4- U (8)
- (ii) Describe about the various types of pumps used for lifting the sewage. CO4- U (8)
20. (a) Explain detail about activated sludge process and its components. CO5- U (16)
Or
- (b) (i) Explain detail about trickling filter process and its components CO4- U (8)
- (ii) Discuss the digester and biogas recovery process.. CO4- U (8)

