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Roll No.

320653(20)

B. E. (Sixth Semester) Examination, Nov.-Dec. 2021

(New Scheme)

(Civil Engg. Branch)

ENVIRONMENTAL ENGINEERING-I

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Part (a) of each question is compulsory and carries 02 marks. Attempt any two parts from (b), (c) & (d) and carries 7 marks each.

Unit-I

1. (a) What is Intakes?
- (b) Discuss the various factors which directly affect the capita demand of a town?
- (c) Write the short notes on :

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- (i) Infiltration Gallery
- (ii) Springs
- (d) The population of 5 decades from 1930 to 1970 are given below table. Find out the population after one, two and three decades beyond the last known decade by using arithmetic increase method.

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

Unit-II

2. (a) What is E-coli?
- (b) Explain in detail chemical characteristics of water?
- (c) What are various types of settling?
- (d) The maximum daily demand at a water purification plant has been estimated as 12 million liters per day. Design the dimensions of a suitable

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sedimentation tank for the raw supplies, assuming a detention period of 6 hours and velocity of flow as 20 cm per minute.

Unit-III

3. (a) Define filtration.
- (b) Design 4 slow sand filter beds from the following data:
Population to be served – 50,000 persons per capita demand - 150 liters/head/day Rate of filtration 180 liters/hr./sq. m.
Length of each bed = twice the breadth.
Assume maximum demand as 1.6 times the average daily demand. Also assume that one unit, out of 5 will be kept as stand by.
- (c) Discuss the different problems of rapid sand filter and their remedy.
- (d) Explain physical and chemical methods of disinfection.

Unit-IV

4. (a) What do you mean by softening of water?

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- (b) What are the points consider before deciding the location of the distribution reservoir?
- (c) Describe following special treatments of water :
 - (i) Iron removal
 - (ii) Use of copper sulphate
- (d) What do you mean by hard water and write various troubles causes by hard water?

Unit-V

5. (a) Define "ALR".
- (b) Discuss control measure on noise pollution.
 - (c) Classify the different types of air pollutants?
 - (d) Explain in detail of Electrostatic precipitator.