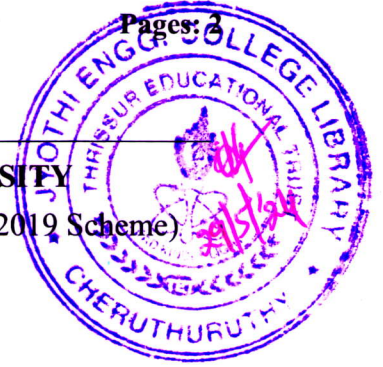


Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

B.Tech Degree S6 (R,S) / S4 (PT) (R,S) Examination May 2024 (2019 Scheme)

**Course Code: CET304****Course Name: ENVIRONMENTAL ENGINEERING**

Max. Marks: 100

Duration: 3 Hours

**PART A***Answer all questions, each carries 3 marks.*

Marks

- |    |   |     |
|----|---|-----|
| 1  | Explain the factors affecting wet weather flow.                                 | (3) |
| 2  | Analyse the use of Logistic curve method in population forecasting?             | (3) |
| 3  | Explain any three factors affecting site selection of water treatment plant.    | (3) |
| 4  | What is discrete and flocculent settling?                                       | (3) |
| 5  | What are the methods for water disinfection?                                    | (3) |
| 6  | Briefly explain the pipe network analysis.                                      | (3) |
| 7  | Explain the difference between grit chamber and detritus tank.                  | (3) |
| 8  | What are the factors affecting the performance of the activated sludge process? | (3) |
| 9  | What are the operational problems with UASB?                                    | (3) |
| 10 | What are the advantages of natural waste water treatment?                       | (3) |

**PART B***Answer one full question from each module, each carries 14 marks.***Module I**

- |    |   |     |
|----|---|-----|
| 11 | a) List any four major factors affecting the rate of demand of water and explain the concept of fluctuations in water demand. | (8) |
|    | b) With a neat sketch explain any water intake structure.   | (6) |

**OR**

- |    |  |      |
|----|--|------|
| 12 | a) With the help of neat sketch, explain different types of pumps used for water conveyance. | (10) |
|    | b) Define population equivalent and design period  | (4)  |

**Module II**

- |    |  |      |
|----|--|------|
| 13 | a) Design a plain rectangular sedimentation tank for water supply scheme having capacity to treat water=12 MLD. Assume the data which is required. | (10) |
|----|--|------|

- b) What are the different types of screens used in water treatment? (4)

OR

- 14 a) Analyse the use of coagulants. Enumerate the different coagulants used. (5)  
b) What are the goals of various conventional water treatment methods in ensuring safe and clean water? (9)

**Module III**

- 15 a) Enlist and analyse the different layout of distribution networks with their merits and demerits. (6)  
b) Compare slow sand filter and rapid sand filter with neat sketch. (8)

OR

- 16 Design a rapid gravity filter for a town having a total filtered water requirement of 5 million litres of water per day. Assume suitable data. (14)

**Module IV**

- 17 a) Explain the working of Activated sludge waste water treatment plant with a neat sketch. (10)  
b) Discuss aerobic and anaerobic treatment in waste water. (4)

OR

- 18 a) Explain the working of Trickling filter plant with a neat sketch. Also mention the advantages and disadvantages. (10)  
b) Explain the advantages of equalization tank in sewage treatment plant. (4)

**Module V**

- 19 Design a septic tank for a small colony of 200 persons provided with a water supply of 200 litres per person per day. Assume the data required. (14)

OR

- 20 a) Analyse the methods adopted for sludge treatment process. (6)  
b) Explain the working of oxidation ponds with a neat sketch. Also mention the advantages and disadvantages. (8)

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