



Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Eighth Semester B.Tech Degree Supplementary Examination August 2021

Course Code: CE402

Course Name: ENVIRONMENTAL ENGINEERING – II

Max. Marks: 100

Duration: 3 Hours

PART A*Answer any two full questions, each carries 15 marks.*

Marks

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|---|--|-----|
| 1 | a) What is dry weather flow? What are the various factors affecting it? | (5) |
| | b) Explain the importance of self cleaning velocity and non-scouring velocity in the design of sewers. | (5) |
| | c) What is relative stability? What is its importance in wastewater analysis? | (5) |
| 2 | a) Explain the fluctuations of sewage flow. | (5) |
| | b) Which system of sewage is suitable under Indian scenario? Justify your answer. | (5) |
| | c) What is Time of concentration? Explain its significance in sewer design. | (5) |
| 3 | a) Explain any 3 physical characteristics of sewage. | (5) |
| | b) Describe different types of sewers. | (5) |
| | c) A wastewater flow of $8000\text{m}^3/\text{day}$ with BOD_5 350mg/l is received at a sewage treatment plant. Estimate the BOD load in Kg/day. | (5) |

PART B*Answer any two full questions, each carries 15 marks.*

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| 4 | a) What are the various methods of waste water disposal? Discuss their merits and demerits. | (6) |
| | b) With the aid of sketch, describe the principle involved in the design and construction of Grit chamber. | (5) |
| | c) Explain the treatment of sewage by activated sludge process. Mention the advantages and disadvantages of this system. | (4) |
| 5 | a) Explain the working of rotating biological contactors. | (5) |
| | b) What are the purposes of flow equalization tank? | (4) |
| | c) Design a rectangular sedimentation tank for treating the sewage from a city, with a maximum daily demand of 12 million litres per day. | (6) |

6 a) Describe contact bed with a neat sketch. Differentiate it from Intermittent sand filter. (7)

b) Explain oxygen sag curve. (8)

PART C

Answer any two full questions, each carries 20 marks.

7 a) Note down the design criteria for a typical sludge digestion tank and explain its working. (10)

b) Design a septic tank for 80 peoples with sewage/capita/day of 125 litres. (10)

8 a) Describe with sketch, the constructional features of Imhoff tank. (10)

b) What is thickening of sludge? Explain any one method of thickening. (10)

9 a) What are the methods of disposal of sludge? (10)

b) Describe Oxidation ditch with figure. Differentiate it from oxidation pond. (10)
