

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

Course Code: CE405
Course Name: ENVIRONMENTAL ENGINEERING- I

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

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| 1 a) What is fire demand? How will you calculate fire demand? | (5) |
| b) Explain in brief different methods used for prediction of future population of a city. | (10) |
| 2 a) What are the various factors affecting "per capita demand"? | (5) |
| b) Explain Logistic curve method of population forecasting. | (10) |
| 3 a) List out the different factors to be considered while selecting the location of an intake well. | (5) |
| b) Describe the different methods for bacteriological analysis of water. | (10) |

PART B

Answer any two full questions, each carries 15 marks.

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| 4 a) Differentiate between Type I and Type II settling. | (4) |
| b) Compare alum and iron salts as coagulants. | (4) |
| c) Illustrate with a sketch, the different functional zones of a rectangular sedimentation tank. | (7) |
| 5 a) Explain the procedure for determination of Optimum Coagulant Dosage by Jar Test with a neat sketch. | (7) |
| b) Explain the theory of sedimentation. | (8) |
| 6 Design a rapid sand filter for a total demand of 6 MLD of water with all its principal components. | (15) |

PART C

Answer any two full questions, each carries 20 marks.

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| 7 a) Explain the various methods of disinfection of water. | (8) |
| b) Explain breakpoint chlorination and super chlorination. | (8) |
| c) What is meant by fluoridation? | (4) |
| 8 a) Explain the desalination process by electro-dialysis with neat sketch. | (5) |
| b) Explain the types of aerators with suitable figures. | (10) |

- c) Give an account on Adsorption. (5)
- 9 a) The following pipe network consists of 5 pipes. The head loss in a pipe is given by $hf = X.Q^2$. The values of X for different pipes and the flows at nodes are given in figure. Calculate the discharge in each pipe of the network. (20)



