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

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**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **14CE2038** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INDUSTRIAL WASTE TREATMENT AND DISPOSAL** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q.**  **No.** | **Sub**  **Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain the significance of any two chemical parameters in wastewater. | CO3 | 10 |
| b. | Discuss the effects of industrial waste disposal in land and water. | CO2 | 10 |
| **(OR)** | | | | |
| 2. | a. | What is self purification of river? Enumerate the factors affecting the self purification process. | CO3 | 12 |
| b. | Write the applications of bioassay. | CO3 | 8 |
| 3. | a. | Explain how waste volume reduction can be achieved in an industry. | CO3 | 10 |
| b. | Explain the steps involved in waste auditing. | CO3 | 10 |
| **(OR)** | | | | |
| 4. | a. | Explain the possibility of by - product recovery in pulp and paper industries. | CO1 | 10 |
|  | b. | Explain the steps in strength reduction of industrial wastewater. | CO1 | 10 |
| 5. | a. | Explain the methods of neutralization. | CO1 | 10 |
| b. | Explain with neat sketch the working principle of a floatation tank. | CO1 | 10 |
| **(OR)** | | | | |
| 6. | a. | Describe with neat sketch the classification of sedimentation tank. | CO1 | 10 |
| b. | Explain the methods of equalization. |  | 10 |
| 7. | a. | Explain the principle involved in chemical precipitation and chemical oxidation. | CO1 | 10 |
| b. | Explain with neat sketch the removal mechanism in a stabilization pond. | CO1 | 10 |
| **(OR)** | | | | |
| 8. | a. | Explain with neat sketch the modifications in activated sludge process. | CO1 | 10 |
| b. | Discuss the technique involved in nitrogen removal from industrial wastewater. | CO1 | 10 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Explain the salient features of Air Prevention and Control of Pollution Act (1981) and Water Prevention and Control of Pollution Act (1974). | CO3 | 10 |
| b. | Explain the characteristics and treatment of tannery industry wastewater. | CO3 | 10 |