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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14CE2038** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INDUSTRIAL WASTE TREATMENT AND DISPOSAL** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain the process of aerobic decomposition of organic matter. | CO1 | **10** |
| b. | Explain briefly about chemical precipitation. | CO2 | **10** |
| **(OR)** | | | | |
| 2. | a. | Narrate the pollution caused by tannery waste water and explain how it can be controlled? | CO3 | **10** |
| b. | Discuss on the factors affected by pharmaceutical waste and suggest remedies to overcome the effluent containing the large amount of antibiotics. | CO3 | **10** |
|
| 3. | a. | Discuss on the optimized design of wastewater treatment systems for application in the petro chemical industry. | CO3 | **10** |
|  | b. | Characterize the various treatment processes for food and beverage industry wastewater. What are the prospects of waste utilization from food industry? | CO3 | **10** |
| **(OR)** | | | | |
| 4. | a. | Write a short note on: (i) Separation of solids (ii)Water reuse and recycling practices in industry (iii) Sanitary lanfilling | CO1 | **10** |
|  | b. | Write briefly the efficient standards adopted for industrial wastes in our country. | CO3 | **10** |
|  |  |  |  |  |
| 5. | a. | What is the role of chemical oxidation in industrial wastewater treatment? | CO2 | **8** |
|  | b. | Describe in detail the various steps involved in wastewater purification system. | CO2 | **8** |
|  | c. | Name any two physical unit processes in wastewater treatment plant. | CO2 | **2** |
|  | d. | List out the methods available for separation of solids. | C02 | **2** |
| **(OR)** | | | | |
| 6. | a. | Explain how thermal power plant pollutes air and water. State also the effects of such pollution. | CO2 | **10** |
|  | b. | Write a brief note on Environmental Legislations. | CO3 | **10** |
| 7. | a. | Write a note on cleaner technology. | CO3 | **10** |
|  | b. | Explain equalization and neutralization of industrial wastewater. | CO1 | **10** |
| **(OR)** | | | | |
| 8. | a. | What is a stabilization pond? Explain the three types of stabilization pond in detail. | CO1 | **8** |
|  | b. | Explain the process of anaerobic decomposition of organic matter. | CO1 | **8** |
|  | c. | Write a short note on types of filters. | CO1 | **2** |
|  | d. | What do you mean by flocculation? | CO2 | **2** |
|  | | **Compulsory:** |  |  |
| 9. | a. | Characterize the various treatment processes for food and beverage. | CO2 | **8** |
|  | b. | Write in detail on removal of solids and dissolved solids from Distillery Industrial wastewater. | CO2 | **8** |
|  | c. | What are the major pollutants in tannery wastewater? | CO2 | **2** |
|  | d. | What is meant by advanced oxidation of a pulp mill bleaching wastewater? | CO2 | **2** |

ALL THE BEST