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 – April/May – 2017**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **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. |  | Discuss in detail about the process involved in aerobic and anaerobic decomposition along with their benefits. | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Define photochemical smog. Mention the major component that caused London smog and along with the formation of smog. | CO1 | 15 |
| b. | Write a short note on temperature inversion. | CO1 | 5 |
| 3. | a. | Summarize on the various types of processes involved in neutralization. | CO2 | 10 |
|  | b. | Name the treatment that will oxidize the pollutants to biodegradable end-products. Elaborate the process in detail. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Paraphrase about stabilization pond. With the help of diagram explain the types of stabilization pond. | CO3 | 15 |
|  | b. | Formulate the steps involved in cleaner production with the help of flowchart. | CO2 | 5 |
| 5. | a. | Outline the steps carried out in waste audit along with the case study. | CO2 | 15 |
|  | b. | Mention any five purpose of equalization in industrial treatment facilities. | CO1 | 5 |
| (OR) | | | | |
| 6. | a. | Categorize the sources of pollution in pulp and paper mill. Write the major effects of wastes on receiving water bodies. | CO3 | 10 |
|  | b. | Discuss the treatment methods that can be adopted for paper and pulp mill waste. | CO1 | 10 |
| 7. |  | Draw the flow diagram for both manufacturing and treatment of sugar mill waste. And explain the same. | CO3 | 20 |
| (OR) | | | | |
| 8. |  | Explain the methods that is adopted to treat the following units in a steel plant.   1. Coke ovens b) Rolling mills c) Oxygen plant d) Pickling bath | CO1 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Write down the effects of tannery waste in receiving waters and sewers. | CO3 | 10 |
|  | b. | Explain the biological and chemical treatment adopted for tannery wastewater. | CO2 | 10 |

ALL THE BEST