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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

**Supplementary Examination – June – 2017**

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| **Code :** | **14BT2053** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INDUSTRIAL EFFLUENT TREATMENT** | **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 | Give your suggestion why do go for waste water treatment. | CO1 | 5 |
|  | b | List out the industry name of high toxic waste water discharging | CO1 | 5 |
|  | c | Describe the different methods available for industrial waste water treatment. | CO2 | 10 |
| (OR) | | | | |
| 2. | a | Explain in detailed waste water characteristics for physical and biological methods. | CO4 | 15 |
|  | b | Explain grit removal with suitable examples. | CO2 | 5 |
| 3. | a | Describe the construction and working of Rotary drum filtration with neat sketch. | CO2 | 10 |
|  | b | Write short notes on i) Filter medium ii) Filter resistance iii) Cake resistance iv) Filter aids. | CO1 | 10 |
|  |  |  |  |  |
| (OR) | | | | |
| 4. | a | Discuss the design of a thickener based on the batch sedimentation with neat block diagram. | CO3 | 10 |
|  | b | Distinguish between free settling and hindered settling. | CO2 | 10 |
| 5. |  | Write on the Water Act Statutes and explain the process of mixing and devices involved. | CO4 | 20 |
| (OR) | | | | |
| 6. | a. | Write short notes on i) Impeller ii) Turbine iii) paddles | CO4 | 10 |
|  | b. | Give a detailed on power consumption and impeller tip speed of fluids. | CO5 | 10 |
| 7. | a | Give an account of screening and screening devices and strategies. | CO5 | 10 |
|  | b | Derive the screening effectiveness. | CO3 | 10 |
| (OR) | | | | |
| 8. | a. | Distinguish between bio adsorption and adsorption process. | CO5 | 10 |
|  | b. | Write a note on the Inorganic Components present in waste water. | CO2 | 10 |
|  | | **Compulsory**: |  |  |
| 9. |  | Discuss Mixed Culture and write on the usage of mixed cultures on Biological Waste Water treatment processes. | CO5 | 20 |