**D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**

**Set-: I**

**Q. Paper Code:**

**22CE302502**

**KASABA BAWADA KOLHAPUR-416006**

**(An Autonomous Institute)**

T. Y. B. Tech (Civil), Sem-V

**END SEMESTER EXAMINATION (ESE), Nov. – 2022**

Course Name: Environmental Engineering Course Code: 201CEL302

Seat No:

**Day and Date: Thursday, 08.12.2022**

**Time: 2.00 pm to 4.00 pm Max. Marks- 50**

***Instructions:***

1. *All Questions are compulsory.*
2. *Figure to the right indicate full marks.*
3. *Use of non-programmable calculator is allowed.*
4. *Assume suitable data for design wherever necessary and mention the same.*

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| **BT** | **CO’s** | **Q. No.** |  | **Marks** |
|  |  | **Q.1** | **All Questions are compulsory** | **20** |
| **2** | **CO1** | **a** | Why population forecasting is necessary? Explain any one method in detail with formula. | **6M** |
| **2** | **CO2** | **b** | Explain the construction and operation of filtration process in rapid sand filter with diagram. | **6 M** |
| **2** | **CO3** | **c** | Explain the various layout patterns of water distribution system with neat sketches. | **8 M** |
|  | | | | |
|  |  | **Q.2** | **All Questions are compulsory** | **10** |
| **1,2** | **CO1** | **a** | Distinguish between the combined and separate sewerage system. | **6** |
| **1,2** | **CO1** | **b** | The 2-day BOD of wastewater sample incubated at 20oC is 150 mg/L. Determine the time required to have BOD value of 250 mg/L at the same temperature. BOD rate constant ‘k’ is 0.20 per day base ‘e’ at 20oC. | **4** |
|  | | | | |
|  |  | **Q.3** | **All Questions are compulsory** | **10** |
| **1,2** | **CO2** | **a** | Explain the constructional features, operation and mechanism of Trickling Filter with neat sketch. | **6** |
| **1,2** | **CO2** | **b** | Explain methods of disposal of wastewater in detail. | **4** |
|  | | | | |
|  |  | **Q.4** | **Attempt any two out of three questions** | **10** |
| **1,2** | **CO4** | **a** | Explain the different MSW collection method. | **5** |
| **1,2** | **CO4** | **b** | Explain the procedure for EIA. | **5** |
| **1,2** | **CO4** | **C** | Explain one-pipe system in building sanitation with neat sketch. | **5** |

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