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



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

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| **Code :** | **18CE3037** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ENVIRONMENTAL CHEMISTRY AND MICROBIOLOGY** | **Max. Marks :** | **100** |

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| **Q. No.** | **Sub Div.** | **Questions** | **Course Outcome** | **Marks** |
| **ANSWER ANY FIVE QUESTIONS (5 x 16 = 80 Marks)** | | | | |
| 1. | a. | Elaborate green chemistry and its 12 principles. | CO1 | 10 |
| b. | Mention the applications of water and wastewater treatment in aquatic chemistry. | CO2 | 6 |
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| 2. | a. | Discuss on mass balance and solubility product. | CO3 | 10 |
| b. | Summarize the international and national level measures taken to prevent the ozone layer depletion. | CO2 | 6 |
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| 3. | a. | Describe the Electromagnetic radiation, Frequency, Wavelength and the process and the applications of UV Visible Spectroscopy. | CO1 | 10 |
| b. | Relate adsorption and absorption. | CO1 | 6 |
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| 4. | a. | Illustrate the forces considered in colloidal chemistry. | CO3 | 10 |
| b. | Describe the Prokaryotic organisms and their structure and characteristics. | CO5 | 6 |
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| 5. | a. | Enumerate the technologies used in surface chemistry. | CO4 | 5 |
| b. | Elaborate the process of culturing of micro – organisms. | CO6 | 5 |
| c. | Demonstrate the distribution of microorganism in air, water and soil. | CO6 | 6 |
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| 6. | a. | Define the terms oxidations sorption, sorbate, sorbent and sorption isotherm I and II. | CO4 | 8 |
| b. | Discuss the transmission of pathogens. | CO5 | 8 |
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| 7. | a. | Compare Freundlich with Langmuir isotherms with neat diagrams. | CO4 | 8 |
| b. | Discuss the eukaryotic organisms. | CO5 | 8 |
| **COMPULSORY QUESTION (1 x 20 = 20 Marks)** | | | | |
| 8. |  | Compile the terms: biodegradation, bioaugmentation, biomagnifications, bioassay and microbial leaching. | CO6 | 20 |