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**PRESIDENCY  
UNIVERSITY  
BENGALURU**

**School of Engineering**

**Mid - Term Examinations - November 2024**

**Semester:** 5<sup>th</sup>

**Date:** 06-11-2024

**Course Code:** CIV2027

**Time:** 09.30am to 11.00am

**Course Name:** Environmental Pollution and Control

**Max Marks:** 50

**Program:** B-Tech

**Weightage:** 25%

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**Instructions:**

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

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**Part A**

**Answer ALL the Questions. Each question carries 2marks.**

**2Mx5Q=10M**

- |   |   |         |    |     |
|---|---|---------|----|-----|
| 1 | What is non-point source of water pollution? Give an example. | 2 Marks | L1 | CO1 |
| 2 | What are nektons and benthos?                                 | 2 Marks | L1 | CO1 |
| 3 | Define Lake stratification?                                   | 2 Marks | L1 | CO1 |
| 4 | Name any three electron acceptors of anaerobic degradation.   | 2 Marks | L1 | CO1 |
| 5 | Define Biochemical Oxygen Demand (BOD).                       | 2 Marks | L1 | CO1 |

**Part B**

**Answer ALL Questions. Each question carries 10 marks.**

**4QX10M=40M**

- |   |   |          |    |     |
|---|---|----------|----|-----|
| 6 | The Water Act 1974 provides maintaining and restoring of all water sources. Explain the objectives water act and duties of Central Pollution Control Board (CPCB) in combating water pollution. | 10 Marks | L2 | CO2 |
|---|---|----------|----|-----|

**Or**

- |   |   |          |    |     |
|---|---|----------|----|-----|
| 7 | Primary treatment consists of sinking of suspended solids by sedimentation in settling basins. Construct the primary treatment and sedimentation process with sketch. | 10 Marks | L3 | CO2 |
|---|---|----------|----|-----|

**8** Preliminary treatment consists of removal of floating material like dead animals, tree branches, papers, plastics, wood pieces, vegetables peels etc., and also the heavy settleable inorganic solids. Identify the treatment device for removal of large floating substances in waste water and construct the diagram with classes based on size. **10 Marks L3 CO2**

**Or**

**9** Trickling Filter also known as percolating or sprinkling filter, is like a well having depth up to about 2m and filled with some granular media. The sewage is sprinkled over the media which percolates through filter media and is collected through the under-drainage system. Summarize the advantage and disadvantages of trickling filter. **10 Marks L2 CO2**

**10** Water is getting polluted day by day due to excessive and careless use. So, the percent of available drinking water is reducing and the effects of it are very harmful for all living organisms. Illustrate the major sources of water pollution and their effects on human environment. **10 Marks L2 CO2**

**Or**

**11** Biological treatment processes that use a suspended growth of organisms to remove BOD and suspended solids. The process requires an aeration tank and a settling tank. Identify the suspended growth process which is developed by England in 1914 and develop the flow diagram with factors affecting it. **10 Marks L3 CO2**

**12** Conventional treatment or conventional mechanical wastewater treatment is the term used to describe the standard method of treatment designed to remove organic matter and solids from solution. construct the stages of waste water treatment with flow chart. **10 Marks L3 CO2**

**Or**

**13** The values of total solids, temperature, calcium hardness, methyl orange alkalinity and pH of water sample are 172mg/l, 32°C, 95mg/l as CaCO<sub>3</sub>, **10 Marks L3 CO2**

Note: Obtain the A, B, C and D values from the below table. <b>Total Solids Mg/l</b>	<b>A</b>	<b>Temp. °C</b>	<b>A</b>	<b>Ca Hardness Mg/l</b>	<b>C</b>	<b>MO Alkalinity Mg/l</b>	<b>D</b>
50 -300	0.1	22 -27	2.01	139 -174	1.8	89 -110	2.0
400 - 1000	0.2	28-31	1.9	175 -220	1.9	111 - 139	2.1
		31-37	.8	221 -270	2.0	140 -176	2.2

and 112mg/l as CaCO<sub>3</sub> and 7.1 respectively. Calculate the Langelier-saturation index and Ryzner-stability index.