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**PRESIDENCY UNIVERSITY
BENGALURU
SCHOOL OF ENGINEERING**

MAKE UP EXAMINATION – JAN 2023

Course Code: CIV 2027

Course Name: Environmental Pollution and Control

Program : B.Tech

Date: 25-Jan-2023

Time: 1:00 PM to 04:00 PM

Max Marks: 100

Weightage: 50%

Instructions:

- (i) *Read the question properly and answer accordingly.*
 - (ii) *Question paper consists of 3 parts.*
 - (iii) *Scientific and Non-programmable calculators are permitted.*
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Part A [Memory Recall Questions]

Answer all the Questions. Each question carries FIVE marks. (6Qx5M=30M)

1. What is lentic aquatic ecosystem? Enlist any four types of lake organisms with examples. (C.O.NO.1) [Knowledge]
2. Define biodegradation? Write the biochemical reactions for aerobic and anaerobic biodegradation. (C.O.NO.1) [Knowledge]
3. What is Particulate matter? List the types of particulate matter based on size with examples. (C.O.NO.2) [Knowledge]
4. What is lapse rate? Differentiate Adiabatic and Ambient lapse rate. (C.O.NO.2) [Knowledge]
5. Define carbon credit? Differentiate VER and CER. (C.O.NO.2) [Knowledge]
6. When the swachh bharath mission was launched by Indian government? List the top ten cleanest cities in India as per swachh survekshan survey 2019. (C.O.NO.4) [Knowledge]

Part B [Thought Provoking Questions]

Answer all the Questions. Each question carries TEN marks. (4Qx10M=40M)

7. 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. Explain the working principle of trickling filter with neat sketch.

(C.O.NO. 1) [Comprehension]

8. Water-borne diseases in India cause a huge disease burden while also resulting in significant loss of life. Since water-borne diseases can only be reduced by access to safe drinking water, the government launched the National Rural Drinking Water Programme (NRDWP) in 2009, which is now called the Jal Jeevan Mission. Identify the causative organisms, diseases for water based and water related infections and suggest the appropriate control measures to these diseases.

(C.O.NO. 3) [Comprehension]

9. Plume refers to the path and extent in the atmosphere of the gaseous effluents released from a source usually a stack. The atmospheric conditions play a major role in dispersion of air pollutants. Identify the plume types for unstable, and stable atmospheric conditions and discuss the same with the figures.

(C.O.NO.2) [Comprehension]

10. Excessive noise is one of the pollutant in industry, which is required to be control for preventing the workers from various disease. Although it is not possible to complete control the noise in the industry, we can reduce the intensity of noise. Suggest the ways to control noise at industry and discuss any two of it.

(C.O.NO.1) [Comprehension]

Part C [Problem Solving Questions]

Answer all the Questions. Each question carries FIFTEEN marks. (2Qx15M=30M)

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 and depict the suspended growth process which is developed by England in 1914 with flow diagram and factors affecting it. (C.O.No.1) [Comprehension]

12. Many devices are available to remove particulate matter from industrial stack air. The choice of which depends on characteristics of particulate matter, flow rate, collection efficiency and cost. (C.O.No.2) [Comprehension]

a) Identify and depict the working principle of the device, which can be used to remove even acidic gases with particulate matter.

b) Identify and depict the working principle of the device which can be used remove even submicroscopic particles.