

Reg. No.:



Name:

University of Kerala

Y7609

Fourth Semester FYUGP Degree Examination, May 2026

Discipline Specific Elective

CHEMISTRY

UK4DSECHE200 - ENVIRONMENTAL CHEMISTRY - II

Academic Level: 200-299

2024 Admission

Time: 1 Hour 30 Minutes(90 Mins.)

Max. Marks: 42

**Part A. 6 Marks.Time:6 Minutes.(Cognitive Level:Remember(RE)/Understand(UN)) Objective Type. 1 Mark
Each.Answer all questions**

Qn No.	Question	CL	CO
1	Indicate the shape of water molecule. Options : A)Linear B)Bent C)Tetrahedral D)Trigonal Planar	RE	1
2	State the principle of aeration in wastewater treatment.	RE	4
3	Explain the role of buffer solutions in EDTA titration.	UN	3
4	Identify one major health risk associated with consuming water polluted by cadmium (Cd).	UN	2
5	Explain the importance of controlling water pollution.	UN	2
6	Give two ions responsible for the permanent hardness of water.	UN	3

Part B. 8 Marks.Time:24 Minutes.(Cognitive Level:Understand(UN)/Apply(AP))Short Answer. 2 marks each.Answer all questions

Qn No.	Question	CL	CO
7	Explain the working principle of electrodialysis.	UN	4
8	Water is called as universal solvent. Discuss.	UN	1
9	Apply the concept of dissolved oxygen to predict whether a sample with DO = 2 mg/L is polluted.	AP	3
10	Differentiate between "biodegradable" and "non-biodegradable" pollutants using one example for each.	AP	2

Qn No.	Question	CL	CO
11	A) A thermal power plant discharges warm water into a river. Apply the concept of heat capacity and its effect on aquatic ecosystems to analyze the consequences. OR B) A stagnant water body emits foul smell. Apply carbon transformation processes by bacteria to explain the formation of gases and their environmental impact.	AP	1, 1
12	A) Analyze the causes of eutrophication in freshwater bodies and explain the role of nutrients in the process. OR B) Critically analyze the impact of acid mine drainage on water quality and aquatic life.	AN	2, 2
13	A) Evaluate the effectiveness of different methods used for determining pH, turbidity, and conductivity in assessing water quality. OR B) Critically evaluate the interrelationship between COD and BOD in assessing organic pollution.	EV	3, 3
14	A) Design a flow chart for a conventional water treatment plant and explain each stage. OR B) Formulate a strategy for effective disinfection of wastewater. Compare different disinfectants and justify your choice.	CR	4, 4