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Jamia Hamdard
Department of Chemistry
School of Chemical & Life Sciences
M.Sc. Chemistry/Semester-III Examination-2023
Paper Title: Environmental Chemistry
Paper Code: MCHCOE-307

Time 3 hours

Maximum Marks 75

Note: This paper has 3 sections A, B, and C, Attempt all the three sections**Section A:** Answer *all* the questions; **Section B:** Answer *any 2* out of 4; **Section C:** Answer *all* the questions, each question has an *internal choice***Abbreviations Used**

CLO- Course Outcome, Program Outcome, Bloom Taxonomy Level: BT level 1-Remember; BT level 2-Understand; BT level 3-Apply; BT level 4-Analyse; BT level 5-Evaluate, BT level 6-Create

SECTION AAttempt **all** questions**(10*2= 20 Marks)**

Q. No	Question	BTL	CLO	PLO
A 1.	Explain the control measures for soil pollution from anthropogenic activities.	2	1	2
A 2.	Explain the methods to measure the water quality parameters.	1	3	2
A 3.	Explain the reverse osmosis process.	2	3	1
A 4.	Discuss the water treatment process in the industrial area.	3	5	2
A 5.	Explain the incineration process of solid waste management in an industrial area	5	6	2
A 6.	Describe the analytical methods for monitoring air pollutants.	4	3	3
A 7.	Describe the landfill disposal of waste and its management.	5	5	1
A 8.	How is the biodegradability of wastewater measured?	1	6	1
A 9.	Describe the scientific methods for fly ash disposal.	6	5	3
A 10.	Explain the control measure for ozone depletion.	2	4	2

SECTION BLong type Questions (Attempt **any two** out of four)**(2*10=20 marks)**

Q. No	Question	BTL	CLO	PLO
B 1.	Explain the stages of the nitrogen cycle with examples, their importance, and human effects on the nitrogen cycle.	3	1	2
B 2.	Discuss the various challenges related to waste-disposal management in India. Highlight the recent government initiatives to resolve waste-disposal management.	5	5	3
B 3.	Discuss global warming and mention its effects on the global climate. Explain the control measures to reduce greenhouse gases that cause global warming in light of the Kyoto Protocol of 1997.	1	2	2
B 4.	Air pollution is a transboundary problem, it transcends rural and urban boundaries. But the issue of air pollution in rural India is rarely discussed, and action plans are rigid. Analyse.	4	3	3

SECTION C

Attempt all questions, Each question has an internal choice

(7*5=35 Marks)

Q. No	Question	BTL	CLO	PLO
C 1.	Describe the types of pollutants with examples based on an ecological perspective.	1	CLO 1	1
OR				
	Describe the national ambient air quality standards for air quality in India with respect to industrial, residential, rural areas, and ecologically sensitive areas.	1	5	3
C 2.	Discuss the causes of high GHG emissions from the industrial sector and the steps that can be taken to minimize the emissions.	5	4	2
OR				
	Discuss the difference between the point and non-point sources of water pollution.	4	3	2
C 3.	Discuss the difference between primary and secondary air pollutants.	4	3	2
OR				
	Discuss in detail the photochemical smog emphasizing its formation, effects, and mitigation	5	6	2
C 4.	Enumerate the role of nanofiltration in environmental problems.	2	2	1
OR				
	Describe the sedimentary cycle and its significance.	1	2	1
C 5.	Describe the electrostatic precipitator and separate instrument to control air pollution on an industrial basis.	1	4	2
OR				
	Analysis of the government policy to figure out the solution for air pollution in Delhi.	6	6	3
C 6.	Evaluate Yamuna river water pollution and sustainable solution for the future.	5	6	3
OR				
	Describe the incineration and pyrolysis methods for waste disposal management.	4	5	2
C 7.	What are the rules and regulations Guiding waste management In India?	3	5	2
OR				
	What is the greenhouse effect, and why are scientists concerned about it?	2	4	2

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