

Code: 23CE6401

**II B.Tech - II Semester – Honors Examinations - MAY 2025****ENVIRONMENTAL AIR POLLUTION  
(HONORS in CIVIL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.

2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.

3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.

4. All parts of Question paper must be answered in one place.

BL – Blooms Level

CO – Course Outcome

**PART – A**

		BL	CO
1.a)	How do the different layers of the atmosphere contribute to the regulation of life on Earth?	L2	CO1
1.b)	What are air pollutants, and how are they classified?	L1	CO1
1.c)	Provide one example of different types of sampling methods in the context of air quality monitoring.	L1	CO2
1.d)	What are the instruments used to measure Smoke?	L1	CO2
1.e)	What is the role of heat in atmospheric dynamics?	L1	CO3
1.f)	Define the concept of lapse rate in meteorology.	L1	CO3
1.g)	What are the sources of CO and CO <sub>2</sub> in both residential and commercial indoor environments?	L1	CO4
1.h)	What are the current guidelines and standards for indoor air quality with regard to carbon monoxide (CO) and carbon dioxide (CO <sub>2</sub> )?	L1	CO4
1.i)	What are the causes and effects of acid rain?	L2	CO5
1.j)	What are the various effects of air pollution on animal life?	L2	CO5

## PART – B

			BL	CO	Max. Marks
<b>UNIT-I</b>					
2	a)	Discuss the structure and composition of the Earth's atmosphere.	L3	CO1	7 M
	b)	Discuss the major sources of air pollution and their impacts on human health and the environment.	L3	CO1	3 M
<b>OR</b>					
3	a)	Explain the different categories of air pollutants, including gaseous pollutants, particulate matter, and heavy metals. How do they impact human health, ecosystems, and climate?	L3	CO2	5 M
	b)	How does air pollution contribute to global warming, and what measures can be taken to reduce both air pollution and climate change simultaneously?	L3	CO2	5 M
<b>UNIT-II</b>					
4	a)	Discuss the importance of proper sampling procedures in environmental monitoring.	L3	CO2	4 M
	b)	Explain the different types of sampling methods used to measure SO <sub>2</sub> pollutant.	L3	CO2	6 M
<b>OR</b>					
5	Explain the techniques used in sampling of particulate matter and discuss its advantages in controlling the Air pollution.		L3	CO2	10 M

<b>UNIT-III</b>					
6	a)	Explain the basic properties of the atmosphere and how each of these properties influences air quality.	L3	CO3	4 M
	b)	Discuss the different forms of plume patterns.	L3	CO3	6 M
<b>OR</b>					
7	a)	Explain how four meteorological scales can impact the concentration and distribution of air pollutants in the atmosphere.	L3	CO3	6 M
	b)	Discuss the concept of the wind rose diagram. How is it used to assess the predominant wind patterns in a specific location, and how can this information aid in understanding air pollution behavior and control?	L3	CO3	4 M
<b>UNIT-IV</b>					
8	a)	Discuss the primary sources of indoor carbon monoxide (CO) and carbon dioxide (CO <sub>2</sub> ) emissions.	L3	CO4	5 M
	b)	Discuss the health effects of prolonged exposure to indoor carbon monoxide (CO) and carbon dioxide (CO <sub>2</sub> ). How do these pollutants impact human health at varying concentration levels?	L3	CO4	5 M
<b>OR</b>					
9	a)	Discuss the challenges associated with indoor air quality monitoring.	L3	CO4	5 M

	b)	Explore the role of green building design in controlling indoor air pollution. How do building materials, passive design strategies, and energy-efficient systems help reduce CO and CO <sub>2</sub> exposure?	L3	CO4	5 M
<b>UNIT-V</b>					
10	a)	Describe the long-term effects of exposure to air pollution on biodiversity. How do sustained increases in air pollution levels threaten species diversity in urban and rural ecosystems?	L3	CO5	6 M
	b)	Discuss the relationship between air pollution and global warming.	L3	CO5	4 M
<b>OR</b>					
11	a)	Evaluate the role of air pollution in the depletion of the ozone layer. How do human-made chemicals, such as chlorofluorocarbons (CFCs), damage the ozone layer?	L4	CO5	6 M
	b)	Discuss the Bhopal Gas Tragedy in 1984.	L3	CO5	4 M