Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

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(A constituent unit of MAHE, Manipal)

VI SEMESTER B.TECH. (CIVIL ENGINEERING)

MAKEUP EXAMINATION, JUNE / JULY 2023

SUBJECT: AIR POLLLUTION AND CONTROL

PE-I [CIE-4055]

DATE: – – 2023 **TIME OF EXAM:** – **MAX. MARKS: 50**

Instructions to Candidates:

- Answer **ALL** questions.
- Missing data may be suitably assumed.
- Draw neat sketches wherever necessary.

SL. NO.	QUESTIONS	MARKS	CO's	BL
1A.	Explain primary and secondary air pollutants with examples and also explain the different methods of identification of air pollution.	05	CO1	2
1B.	Illustrate with neat sketches the different types of negative lapse rate.	03	CO2	2
1C.	Explain dry and wet adiabatic lapse rate.	02	CO2	2
2A.	Explain the chemical reactions of SO_2, and NO_2 involved in the atmosphere.	05	CO1	2
2B.	Explain with neat sketches types of plume behavior under non uniform lapse rate.	03	CO2	2
2C.	Explain briefly adsorption on solids of ambient air sampling.	02	CO4	2
3A.	A power plant has four, 200 MW units each with a 100m stack. The stack diameters are 5m. The flue gas exit velocity is 14m/s and stack exit temperature is 145°C. The wind velocity is 4m/s and ambient air temperature is 15°C. Determine plume rise and effective stack height with light wind when dt/dz = 0.5°C/100m.	05	CO2	3
3B.	Explain ambient air sampling and laboratory analysis of NO_2 air pollutant.	03	CO4	2
3C.	Write a note on dry impingement of ambient air sampling.	02	CO4	3

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4A.	Explain with a neat sketch the components of a sampling train and the sampling of circular and rectangular cross sections of a stack. .	**05**	CO4	2
4B.	Illustrate with a neat sketch the construction and working of a spray tower.	**03**	CO4	2
4C.	Write a brief note on air pollution act and legislations.	**02**	CO5	3
5A.	Explain the source correction methods to control air pollution and also explain the prime factors of air pollutants effecting human health.	**05**	CO3	2
5B.	Discuss the phenomenon and effects of Acid rain.	**03**	CO5	2
5C.	Explain the forms of damage caused to leaves of plants affected by pollution.	**02**	CO3	2