Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

IV SEMESTER B.TECH. (CIVIL ENGINEERING)

END SEMESTER EXAMINATION, APRIL/MAY 2019

SUBJECT: **AIR AND NOISE POLLUTION – OE [CIE 3284]**

REVISED CREDIT SYSTEM

(/ 4 / 2019)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

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

Q. No	Question statement	Marks	CO
1A.	Mention the various meteorological factors influencing air pollution and explain primary, secondary and natural pollutants with examples.	**05**	**CO2,1**
1B.	Illustrate with a neat sketch and explain the different atmospheric stability regions.	**05**	**CO2**
2A.	What causes plume rise? Explain with neat sketches any three types of plume behavior under non uniform lapse rate.	**04**	**CO2**
2B.	Explain with equations the different chemical reactions that take place in the atmosphere.	**06**	**CO1**
3A.	Write a note on: i) Tape sampler. ii) Air pollution index.	**05**	**CO3,4**
3B.	If the air conditions are near neutral or unstable, calculate the plume rise for a coal fired plant which has four 200 megawatt units each with a 100m stack. The stack diameters are 2 m. Stack gas exit velocity is 12 m/s, temperature at the stack is 275˚F and ambient air temperature is 77˚F. What is the effective stack height when the wind velocity is 7m/s?	**05**	**CO2**
4A.	With a neat diagram explain the construction and working of a spray tower.	**05**	**CO3**
4B.	Explain isokinetic and non-isokinetic stack sampling of particulate matter.	**05**	**CO3**
5A.	Explain with examples the types of noise, its effects and laws of noise pollution.	**05**	**CO5**
5B.	Give the various noise pollution sources and explain in detail the different methods to control it.	**05**	**CO5**