Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

V SEMESTER B.TECH. (CIVIL ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2018

SUBJECT: AIR POLLLUTION CONTROL ENGINEERING PE-I [CIE-4017]

REVISED CREDIT SYSTEM

(26 /11 /2018)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

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

1A.	Give the classification of air pollutants based on the total sources with examples. Explain any two methods of identification of air pollution.	**05**	**CO1**
1B.	Explain in detail with a neat sketch the different atmospheric stability regions.	**05**	**CO1**
2A.	Define the, terms: i) Aerosols. ii) Abscission. iii) Subsidence Inversion. iv) Emission factor.	**04**	**CO2**
2B.	Explain the characteristics and also the reactions involved in the formation of photochemical smog.	**06**	**CO2**
3A.	What causes plume rise? Explain with sketches any three types of plume behavior and also the most non favorable type which increases ground level pollution.	**05**	**CO3**
3B.	A 1000 MW coal power plant is to be built using a tall stack to disperse the effluent. The stack radius and height is 1m & 100m respectively. The stack exit velocity is 15m/sec & exit temperature is 250°F. Calculate the plume rise and effective stack height for a neutral atmosphere with a wind speed of 12miles/h. The ambient temperature is 60F. (Solve by all applicable formulae)	**05**	**CO4**
4A.	Explain the following : i) High volume filtration ii) Air Pollution Index	**05**	**CO4**
4B.	Explain with neat sketches isokinetic and non-isokinetic stack sampling of particulate matter pollutants.	**05**	**CO4**
5A.	Explain any five air pollution prevention factors to be considered for industrial plant location and planning.	**05**	**CO5**
5B.	Explain with a neat sketch the construction and working of a cyclone separator	**05**	**CO5**