



# Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)



# V SEMESTER B.TECH (CIVIL ENGINEERING)

## **END SEMESTER EXAMINATIONS, NOV/DEC 2015**

# SUBJECT: AIR POLLUTION AND CONTROL- PE-I [CIE 325]

### **REVISED CREDIT SYSTEM**

Time: 3 Hours

MAX. MARKS: 50

#### Instructions to Candidates:

✤ Answer ANY FIVE FULL the questions.

✤ Missing data may be suitable assumed.

1A.	Explain with a neat sketch the different atmospheric stability regions.	05
1B.	Explain the construction of wind rose and pollution rose diagram.	05
2A.	Define the terms: i) Aerosolsii) Effective stack heightiii)Subsidence Inversioniv)Radioactive isotopes	04
2B.	Explain the characteristics and also the reactions involved in the formation of photochemical smog	06
3A.	What causes plume rise? Explain with sketches any three types of plume behavior under non uniform rate.	04
3B.	A 200MW coal unit is to be built using a tall stack to disperse the effluent. The design stack height is 75m. The stack diameter is 2m and the stack exit velocity is estimated to be 12m/sec. The design exit temperature is 200°F. Calculate the effective stack height for an ambient air temperature of 500P on a sunny day with moderate wind of 8m/s at the stack altitude.	06
4A.	Write a note on: i) Adsorption on solids ii) High volume filtration	05
<b>4B.</b>	Explain with a neat sketch the different types of isokinetic sampling.	05
5A.	Explain the different factors to be considered for industrial plant location to prevent air pollution.	05
5B.	Explain ambient sampling and laboratory analysis of SO <sub>2</sub> .	05
6A.	Explain with a neat sketch an electrostatic precipitator.	05
6B.	Write a note on global warming.	05