Printed Pages: 4 **NEV-402**

(Following Paper ID and Roll No. to be filled in your Answer Books)	
Paper ID : 197405	**Roll No.**

B. TECH.

Theory Examination (Semester-IV) 2015-16

AIR POLLUTION AND CONTROL ENGINEERING

Time : 3 Hours ***Max. Marks : 100***

Section-A

Q1. Attempt all parts. All parts carry equal marks. Write answer of each part in short. (2×10=20)

(a) Suggest the two important steps to control indoor air quality.

(b) What is wind-rose diagram?

(c) Distinguish between "Ambient Air Quality Standards' and "Emission Standards".

(d) When to use Bio-filtration for air pollution control?

(e) Give the applications of air pollution dispersion model.

(f) What is the principal mechanism of adsorption techniques?

(g) Define inversion condition.

(h) What are the major sources and impacts of SPM in air?

(i) How to calculate effective stack height?

(j) Enumerate the limitations of gravitational settling chamber.

Section-B

Q2. Attempt any 5 questions from this section. (10×5=50)

(a) Briefly explain primary and secondary air pollutants with example.

(b) Explain photo chemical smog and coal - induced smog.

(c) What is a wind rose diagram? Explain with a neat sketch.

(d) Sketch and explain different kinds of plumes depending upon different environmental conditions (any four).

(e) Explain with sketches the following air pollution control equipment:

i. Spray towers

ii. Cyclones

iii. Pipe-ty pe precipitator

(f) Determine the effective height of stack from the following data

i. Physical height of stack = 180 m

ii. Inside dia of slack - 0.95 m

iii. Wind velocity = 2.75 m/sec

iv. Air temperature = 20°C

v. Borometric pressure - 1000 mb

vi. Stack gas velocity = 11.12 m/sec

vii. Stack gas temperature = 160°C

(g) With a sketch, explain the principle and operation of an electrostatic precipitator. Explain Global warming and its causes and effects.

(h) Discuss the phenomenon of acid rain and its effect.

Section-C

Attempt any 2 questions from this section. **(15×2=30)**

Q3. (a) Define air quality standards.

(b) What are the emission standards? Distinguish between ambient air quality standard and emission standard.

Q4. (a) Explain the working of high volume air sampler, with a sketch.

(b) Explain with a neat sketch, the principle and construction of fabric filter. Give applications.

Q5. Write short notes on process of control of gaseous pollutants and derive it.