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B.TECH
(SEM-VII) THEORY EXAMINATION 2021-22
AIR AND NOISE POLLUTION CONTROL

Time: 3 Hours   *Total Marks: 70*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. **Attempt *all* questions in brief.**   **2 x 7 = 14**

a.	Define air pollution.
b.	Explain the sources and consequence of air pollutants for the following (i) Ozone (ii) Dust (iii) Fumes
c.	Explain primary and secondary air pollutants.
d.	Write a short note on photo-chemical smog?
e.	Enlist various devices used in air quality modelling.
f.	Write down the permissible noise levels in different zones.
g.	Enlist various devices used in Noise pollution measurement.

SECTION B

2. **Attempt any *three* of the following:**   **7 x 3 = 21**

a.	Describe in detail about the various control methods of gaseous pollutants for controlling oxides of sulphur, nitrogen and carbon.
b.	A power plant has a 100 m stack with an inside radius of 1m. The exhaust gases leave the stack with an exit velocity of 10 m/s at a temp. of 220°C. Ambient temp is 6°C, winds at the effective stack height are estimated to be 5 m/s, surface wind speed is 3 m/s, and it is a cloudy summer day. Estimate the effective height of this stack.
c.	Describe with relevant figures, the principle, operation and design aspects of cyclone separator and wet scrubber used in particulate matter control.
d.	Write short notes on (i) Air quality standards (ii) noise pollution standards (iii) Environmental policy (iv) Kyoto Protocol
e.	Explain the concept of equivalent continuous energy level(Leq).

SECTION C

3. **Attempt any *one* part of the following:**   **7 x 1 = 7**

(a)	Define Air (Prevention & Control of pollution Act).Discuss its Salient features.
(b)	Describe various types of pollutants emitted from petrol-driven and diesel driven motor vehicles. Also write Euro-1, Euro-II and Euro-III specifications for pollution control in petrol driven passenger cars.

4. **Attempt any *one* part of the following:**   **7 x 1 = 7**

(a)	Discuss Gaussian plume model for dispersion of air pollutants and its applications
(b)	What are Metrological factors influencing dispersion of air pollutants.

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5. **Attempt any *one* part of the following:** **7 x 1 = 7**

(a)	Discuss Control of particulate air pollutants using gravitational settling chambers
(b)	Briefly explain the working of an electrostatic precipitator with suitable figure

6. **Attempt any *one* part of the following:** **7 x 1 = 7**

(a)	Briefly discuss the use of catalytic converters in vehicular pollution control. Explain the principle, design and working of catalytic converters?
(b)	Write a note on subsidence inversion and double inversion in relation to atmospheric stability

7. **Attempt any *one* part of the following:** **7 x 1 = 7**

(a)	What is power and intensity in noise pollution? Discuss in brief the outdoor noise propagation and indoor noise propagation in relation with noise pollution and control.
(b)	Define Noise pollution. Explain the sources and different methods to control the noise pollutionEnlist impact of noise pollution on human health and environment