Roll No. ..... Total Pages : 04

013507

Dec. 2025

B. Tech. (ME/ME (Hindi Medium)

(Fifth Semester)

Air and Noise Pollution and Control

(OEC-ME-510)

Time : 3 Hours] [*Maximum Marks : 75*

Note : It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

Part A

1. (a) What is thermal inversion ? **1.5**

(b) What are the criteria pollutants ? Write the name of these pollutants. **1.5**

(c) How many air quality parameters notify in NAAQS ? 1.5

(d) What are primary pollutants and secondary pollutants ? 1.5

(e) What is the adiabatic lapse rate ? 1.5

(f) Define indoor air pollutants and write the name of indoor air pollutants. 1.5

(g) Write the measurement units and monitoring time for gaseous air pollutants. 1.5

(h) Define noise and noise pollution. 1.5

(i) Define PM^{1}, $PM^{2.5}$ and PM^{10} ? 1.5

(j) NAAQS, AQI and CPCB is stand for..... . 1.5

Part B

2. (a) Write about the composition and structure of the atmosphere. 7.5

(b) Describe about effects of air pollutants on flora, fauna and other properties. 7.5

3. Write short notes on the following : 3×5=15

(i) Electrostatic Precipitators (ESP)

(ii) Plume behaviour

(iii) Bag-house Filters.

4. (a) What is Stack Sampling ? Briefly explain the sampling and collection of particulate air pollutants. 7.5

(b) Discuss the sources and effects of air pollutants, including carbon monoxide and hydrocarbons. 7.5

5. (a) Define gaseous pollutants and write a short note on gaseous pollution control methods. 5

(b) What is a catalytic converter ? Explain its working and importance. 5

(c) What is the impact of temperature lapse rate, wind velocity and turbulence on air pollution dispersion ? 5

6. (a) Write a short note on the noise pollution monitoring system. 7.5

(b) Explain the noise control techniques and monitoring procedure. 7.5

7. Write short notes on the following : 3×5=15

(i) Outdoor and indoor noise propagation

(ii) Indoor air pollution and its effects

(iii) Euro-I, Euro-II and Euro-III specifications.

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